

Subject Index

Abrasives

Management of Solid Waste from Abrasive Blasting, 1369

Absorbers

Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267

Optimum Design of Absorber for MDOF Structures, 1161

Absorption

Surface-Treated Slag Concrete: Assessing Performance Under Cyclic Wetting, 977

Abutments

Shear Stress around Vertical Wall Abutments, 744

Acceleration

Active Control of Transmission Tower under Stochastic Wind, 1164

Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578

Accelerograms

Synthesizing Ensembles of Spatially Correlated Accelerograms, 349

Accelerometers

Optically Powered Electrical Accelerometer and Its Field Testing, 271

Access roads

Challenges Met in Engineering Newark International Airport Structures, 1394

Accident data

Analysis of Safety Indicators in Construction, 177

Identifying Root Causes of Construction Injuries, 147

Accident prevention

Identifying Root Causes of Construction Injuries, 147

Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846

Psychology of Accident Prevention in the Construction Industry, 924

Accident risks

Managing Industrial Construction Safety in Southeast Texas, 192

Accidents

Fall Protection Analysis for Workers on Residential Roofs, 189

Managing Industrial Construction Safety in Southeast Texas, 192

Psychology of Accident Prevention in the Construction Industry, 924

Virtual Flight Data Recorder for Commercial Aircraft, 18

Accuracy

Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368

Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation, 1192

Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182

Rating Adjustment for Settlement of Cutthroat Flumes, 893

State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293

Acid mine water

Fluidized Bed for Removing Iron and Acidity from Acid Mine Drainage, 459

Acids

Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486

In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481

Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455

Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456

Toxicity of Acrylic Acid to Acetate-Enriched *Methanosarcina* Cultures, 413

Acoustic measurement

Recirculating Flow Generated by Line-Source Bubble Plumes, 754

Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686

Acoustic waves

Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213

Acoustics

ADV Measurements of Turbulence: Can We Improve Their Interpretation?, 721

Application of SASW Method Underwater, 575

Santa Fe Sensation, 1450

State of the Arts, 1454

Acquisition

A Merger Manual, 1424

The New Environment for Consolidation, 1514

Activated carbon

Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288

New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510

Overall Adsorption Isotherm of Natural Organic Matter, 506

Activated carbon treatment

Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485

Activated sludge

Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491

Active control

Active Control of Tensegrity Systems, 21

Active Control of Transmission Tower under Stochastic Wind, 1164

Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295

LQG/LTR Control Methodology in Active Structural Control, 262

Active control

- Multicriteria Optimization for Design of Structures with Active Control, 22
- Open-Close Loop Active Control of Articulated Leg Platform, 297
- Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029
- Semiactive Control Algorithms for Structures with Variable Dampers, 326
- Time-Delay Compensation in Active Control of Structures, 330
- Water Wave Control by Submerged Pitching Porous Plate, 260

Active earth pressure

- Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624

Adjustment

- Carriage Position Adjustment of Triangular Running Skyline System, 1067
- One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732
- River Width Adjustment. I: Processes and Mechanisms, 751
- River Width Adjustment. II: Modeling, 752

Administration

- Techniques for Administrative Creativity in Local Government, 895

Admixtures

- The Search for HPC (Available in Structural Engineering Special Issue only), 1491

Adsorbents

- Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468

Adsorption

- Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Floes, 471
- Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468
- Laboratory Study of Soil Flushing by Aqueous Solutions, 617
- New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510
- NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505
- Overall Adsorption Isotherm of Natural Organic Matter, 506
- Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485
- Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484
- Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825
- Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Advection

- Boundary Conditions for Modeling Transport in Vertical Barriers, 511
- Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Aeration

- Aeration Performance of Low Drop Weirs, 648
- Aeration Performance of Triangular Plan-Form Labyrinth Weirs, 460

1998 ASCE TRANSACTIONS

- In-Stream Hollow-Fiber Membrane Aeration, 715
- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402
- Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726
- Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656
- Aerial photography**
 - Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation, 1192
- Aerobic processes**
 - Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375
- Aerodynamic forces**
 - Complex Notation in Flutter Analysis, 1131
 - Dynamics of Nonlinear Aeroelastic Systems, 24
- Aerodynamics**
 - Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295
 - Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17
 - Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201
 - Technology Readiness and Development Risks of New Supersonic Transport, 29
- Aeroelasticity**
 - Dynamics of Nonlinear Aeroelastic Systems, 24
- Age factors**
 - Business Failures: Liabilities of Newness, Adolescence, and Smallness, 193
 - Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467
- Aggregate gradation**
 - Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961
- Aggregates**
 - Analysis of Granular Bases Using Discrete Deformable Blocks, 1267
 - Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
 - Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961
 - Modeling and Analysis of Aggregate Production Operations, 186
 - Morphological Study of Coarse Aggregates Using Image Analysis, 969
 - The Search for HPC (Available in Structural Engineering Special Issue only), 1491
 - Use of Environmental SEM to Study Asphalt-Water Interactions, 967
- Aging**
 - Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954
 - Triaxial Composite Model for Basic Creep of Concrete, 323
- Agricultural economics**
 - Irrigated Cropping Optimization, 859
- Agricultural engineering**
 - Refining the Definition of Field Capacity in the Literature, 880

Agricultural wastes

Effects of Infiltration on Agricultural Runoff Contamination, 478

Agricultural watersheds

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388

Agriculture

Benefits from Including Wetland Component in Water Supply Projects, 1305

Air conditioning

Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Air entrainment

Critical Submergence for Intakes in Still-Water Reservoir, 657

Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656

Air flow

Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17

Air Flow as Monitoring Technique for Landfill Liners, 437

Air-Permeability as Measure of Rock Mass Behavior, 546

Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339

Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408

Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501

Air injection

Dealing with DNAPLs, 1521

System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408

Air pollution

Monitoring Biofilters Used for Air Pollution Control, 1370

Transportation, Land Use, and Air Quality: Making the Connection, 1602

Air pollution control

Clearing the Air, Biologically, 1495

Monitoring Biofilters Used for Air Pollution Control, 1370

Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Air quality

Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272

Transportation, Land Use, and Air Quality: Making the Connection, 1602

Transportation Planning and Air Quality III: Emerging Strategies and Working Solutions, 1603

Air quality standards

Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272

Air traffic

Airport Modeling and Simulation, 1543

Air water interactions

Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

Water Distribution in Very High Velocity Water Jets in Air, 725

Airblast

The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002

Aircraft

Dynamic Instability of Tires Under Asymmetric Loads, 20

Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219

Virtual Flight Data Recorder for Commercial Aircraft, 18

Aircraft technology

Technology Readiness and Development Risks of New Supersonic Transport, 29

Virtual Flight Data Recorder for Commercial Aircraft, 18

Airfields

Impact of FWD Testing Variability on Pavement Evaluations, 1252

Joint Spalling in Newly Constructed Concrete Pavements, 1004

PCC Airfield Pavement Response During Thaw-Weakening Periods, 87

Airport design

Airport Facilities: Innovations for the Next Century, 1542

Airport Modeling and Simulation, 1543

Benchmarking for Design of Major Airports Worldwide, 1246

Airport runways

Investigation of Joint Spalling on a Concrete Runway, 989

Performance of Plain Concrete Runway Pavement, 1005

Airport terminals

Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219

Scheduled Departure, 1440

Airports

Airport Facilities: Innovations for the Next Century, 1542

Airport Modeling and Simulation, 1543

Benchmarking for Design of Major Airports Worldwide, 1246

Challenges Met in Engineering Newark International Airport Structures, 1394

Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219

Scheduled Departure, 1440

Alaska

Alaska's Last Link, 1536

Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

Sell-Off, 1526

Algorithms

Automated Inversion Procedure for Spectral Analysis of Surface Waves, 595

Behavior of Elastomeric Bridge Bearings: Computational Results, 73

Canal Control Algorithms Currently in Use, 851

Classification of Canal Control Algorithms, 850

Comparing Two Algorithms to Add Large Strains to Small-Strain FE Code, 321

Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138

Development and Evaluation of Canal Automation Algorithm CLIS, 855

Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745

Evolutionary Algorithm for Minimization of Pumping Cost, 111

Global Identification of Surface Irrigation Parameters, 869

Improved Proportional-Integral (PI) Logic for Canal Automation, 857

Novel System for Automatic Pavement Distress Detection, 104

Open-Close Loop Active Control of Articulated Leg Platform, 297

Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266

Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212

Performance Comparison of Overland Flow Algorithms, 688

Runoff Forecasting Using RBF Networks with OLS Algorithm, 815

Semiactive Control Algorithms for Structures with Variable Dampers, 326

Site-Level Facilities Layout Using Genetic Algorithms, 110

Test Cases for Canal Control Algorithms, 853

Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Alignment

Cliffside Correction, 1485

Design Considerations of Sight Distance Red Zones on Crest Curves, 1240

Design of Sag Vertical Curves in Three-Dimensional Alignments, 1200

Design Requirements of Equal-Arc Unsymmetrical Vertical Curves, 1247

Superelevation, Side Friction, and Roadway Consistency, 1249

Alkalinity

Chemical Reactions and Gas Transfer in Natural Waters, 384

Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998

Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978

Quantity of Alkali Silica Gel and Its Effect on Concrete Properties, 964

Allocations

Process Noise and Optimum Observation in Conditional Stochastic Fields, 366

Alloys

Smart Prestressing with Shape-Memory Alloy, 342

Alluvial channels

Calculation of Channel and River Velocities, 750

Comparison of Coupled and Semicoupled Numerical Models for Alluvial Channels, 741

Design for Hydraulic Geometry of Alluvial Channels, 702

Local Scour at Skewed Piers, 737

Prediction of Live-Bed Scour at Bridge Abutments, 722

River Width Adjustment. I: Processes and Mechanisms, 751

River Width Adjustment. II: Modeling, 752

Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Alluvial fans

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762

Alumina

Properties of Red Mud Tailings Produced under Varying Process Conditions, 404

Aluminum

Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Flocs, 471

Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103

Alums

Alum Residual Floc Interactions with an Advancing Ice/Water Interface, 403

Ammonia

Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521

Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425

Amplification

Dynamic Analysis of Existing Continuous Bridge, 60

Amplitude

Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257

Anaerobic digestion

Mathematical Model for Methane Production from a Landfill Bioreactor, 462

Nothing Wasted, 1465

Anaerobic filters

Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461

Multi-Fed Upflow Anaerobic Filter: Development and Features, 517

Anaerobic processes

Anaerobic Treatment of Low-Strength Domestic Wastewater Using an Anaerobic Expanded Bed Reactor, 452

Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826

Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453

Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474

Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374

Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

Toxicity of Acrylic Acid to Acetate-Enriched *Methanosarcina* Cultures, 413

Analysis

Analysis of Linear and Monoclinic River Wave Solutions, 734

Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891

Analytical Expression for Tidal Damping in Alluvial Estuaries, 719

Comparison of Delay Analysis Methodologies, 178

Complex Notation in Flutter Analysis, 1131

Exact Analysis of Nonprismatic Beams, 361

Experimental Analysis of Bolted Connections: Snug Versus Preloaded Bolts, 1108

Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789

Semianalytical Solution to Richards' Equation for Layered Porous Media, 890

Subcritical Open-Channel Junction Flow, 747

Analytical techniques

Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226

Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886

End Bearing Capacity of Drilled Shafts in Rock, 579

Improved Finite-Analytic Methods for Steady-State Transport Problems, 690

Proof of Tienstra's Formula for an External Observation Point, 1184

Anchor piles

Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344

Anchorages

Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76

Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130

Anchors

Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069

Should Grouted Anchors Have Short Tendon Bond Length?, 535

Anemometers

Recirculating Flow Generated by Line-Source Bubble Plumes, 754

Anion exchange

Growth Kinetics of Mixed Cultures under Chlorate-Reducing Conditions, 496

Anisotropic materials

Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241

Anisotropic plates

Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103

Anisotropic soils

Base Stability of Deep Excavation in Anisotropic Soft Clay, 600

NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477

Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797

Anisotropy

Guided Waves in Multilayered Plates for Internal Defect Detection, 246

Solutions of Unsaturated Seepage Problem by Power-Series Method, 813

Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814

Antennas

Shape of Deployable Membrane Reflectors, 26

Approximation methods

Flood Peak Attenuation and Forecast, 793

Reliability of Transmission Structures Including Nonlinear Effects, 1130

Smooth Surface Approximation for Computing Pit Excavation Volume, 1189

Solutions of Unsaturated Seepage Problem by Power-Series Method, 813

Aquatic environment

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Aquifers

A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827

Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886

Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826

Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433

Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Stochastic Approach to Delineating Wellhead Protection Areas, 1302

Arches

Capacity of Masonry Arches and Spatial Frames, 1096

Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299

In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308

Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044

Rebuilding History, 1510

Arching

- Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092
- Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585

Architects

- Realizing Engineer-Led Design/Build, 1444

Architectural engineering

- Kansas State University Architectural Engineering, 40
- Leaning-Structure Statics—Flying Buttresses and Mayan Vault Ceilings, 45

Architecture

- Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403

Arctic regions

- Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83

Areal

- Average Areal Precipitation by Percentage Weighted Polygon Method, 799

Arid lands

- Alternative Landfill Covers Pass the Test, 1496
- Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818
- Bridge Prestress Losses in Dry Climate, 69
- Leaching Effects on the Properties of Cemented Sands in Kuwait, 618

Armor units

- Guidelines for Quarystone Armor Units, 194

Arterial highways

- Speed-Flow Modeling of Arterial Roads in Singapore, 1223

Artesian pressure

- Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319

Artificial intelligence

- Belief Networks for Construction Performance Diagnostics, 99

Artificial islands

- Effects of Construction Joint in Mass Flowable Concrete, 955

Artificial recharge

- Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

ASCE Awards & Prizes

- Combining Snow and Earthquake Loads for Limit States Design, 10
- Construction of the New Coleman Bridge: Fifth Roebling Lecture, 1997, 160
- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Erosion of Fluid Mud Layers. I: Entrainment Model, 8
- Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7
- Ethics: A Professional Concern, 4
- Guide to Structural Optimization, 2
- Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15

- Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

- Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

- Seismic Performance of Confined Sill Plate Connections, 3

- Settlement of Embankments on Soft Clays, 586

- Slope Stability Analyses in Stiff Fissured Clays, 14

- Standing Firm: When Ethics are Challenged, 5

- Strength of Webs Subjected to Compressive Edge Loading, 9

- The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

ASCE Code of Ethics

- Ethics: A Professional Concern, 4
- Sustainable Development and the ASCE Code of Ethics, 1018

ASCE Committees

- Development and Evaluation of Canal Automation Algorithm CLIS, 855

ASCE Outstanding Civil Engineering

- Challenges Met in Engineering Newark International Airport Structures, 1394
- Paradise Crossed, 1471
- The San Francisco Connection, 1473
- Shoring Up Lake Shore Drive, 1472

ASCE Publications

- Foundation for Research in Computing in Civil Engineering, 92
- High-Tech Text, 1459

ASCE Younger Members

- Standing Firm: When Ethics are Challenged, 5

Ashes

- Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384
- Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629

Asia

- Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550

Asphalt mix design

- Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974
- Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971

Asphaltic concrete

- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Effect of Variability on End Product Specifications, 156
- Identifying Component Variability of End Product Specification Tests, 155
- Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961
- Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971
- Model Prediction of Rutting in Asphalt Concrete, 1254

SUBJECT INDEX

Bacteria

- Morphological Study of Coarse Aggregates Using Image Analysis, 969
- Pavement Strain from Moving Dynamic 3D Load Distribution, 1265
- Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208
- Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354
- Asphalts**
- Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984
- Compatibility and Rheological Study of ASR Asphalt Binder, 956
- Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236
- Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954
- Polymer Modification of Arab Asphalt, 972
- Use of Environmental SEM to Study Asphalt-Water Interactions, 967
- Astronomy**
- A Museum for the Heavens, 1456
- Asymmetric structures**
- Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142
- Asymptotic series**
- Rheological Equations in Asymptotic Regimes of Granular Flow, 245
- Attenuation**
- Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582
- Estimating Wave Heights from Pressure Measured in Sand Bed, 1341
- Flood Peak Attenuation and Forecast, 793
- Simplified Frequency Content Estimates of Earthquake Ground Motions, 539
- Australia**
- Balancing Act, 1415
- Modeling Helps in Understanding Policy Alternatives: A Case, 901
- Rapid Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999
- Autocorrelation**
- Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818
- Automated transit vehicles**
- Challenges Met in Engineering Newark International Airport Structures, 1394
- Automatic identification systems**
- Applications of Advanced Technologies in Transportation, 1545
- Automation**
- Application of Automatic Differentiation to Reservoir Design Models, 1298
- Applications of Advanced Technologies in Transportation, 1545
- Automatic Savings, 1463
- Canal Control Algorithms Formulations, 854
- Classification of Canal Control Algorithms, 850
- Client/Server Framework for On-Line Building Code Checking, 106
- Control Improvement for Advanced Construction Equipment, 174
- Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291
- Development and Evaluation of Canal Automation Algorithm CLIS, 855
- Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176
- Hybrid Environment for Standards Processing, 107
- Implementation of Robotics in Building: Current Status and Future Prospects, 143
- Improved Proportional-Integral (PI) Logic for Canal Automation, 857
- Improving IDOT's Pavement Condition Rating Process, 836
- Influence of Canal Geometry and Dynamics on Controllability, 852
- New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195
- Novel System for Automatic Pavement Distress Detection, 104
- Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212
- Test Cases for Canal Control Algorithms, 853
- Automobiles**
- Compatibility and Rheological Study of ASR Asphalt Binder, 956
- Ordered Probability Modeling of Seat Belt Usage, 1232
- Auto-regressive models**
- Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818
- Axial compression**
- Leipholz Column with Shear and Compressibility, 223
- Axial loads**
- Axial and Bending Behavior of Composite Walling, 1107
- Axial Capacity of Offshore Piles in Dense North Sea Sands, 541
- Axially Loaded Concrete-Filled Steel Tubes, 1146
- Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136
- Axisymmetry**
- Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357
- Backfills**
- Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
- Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537
- Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624
- Backwashing**
- Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520
- Sludge's Re-Treat, 1524
- Backwater**
- Contraction and Expansion Losses Through Bridge Constrictions, 710
- Bacteria**
- Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514

Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475

Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536

Modeling Water Treatment Chemical Disinfection Kinetics, 469

Nothing Wasted, 1465

Ballast

Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Bangladesh

Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686

Bank erosion

Experimental Investigation of Flow Past Submerged Vanes, 709

River Width Adjustment. I: Processes and Mechanisms, 751

River Width Adjustment. II: Modeling, 752

Bank stabilization

River Width Adjustment. I: Processes and Mechanisms, 751

River Width Adjustment. II: Modeling, 752

Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Barges

Ice-Tank Data on Brash-Ice Loads against Barges, 88

Integrated Control for Series of Waterway Locks, 1346

Barriers

Boundary Conditions for Modeling Transport in Vertical Barriers, 511

Critical Impact Point for Longitudinal Barriers, 1202

Flexible Dual Membrane Wave Barrier, 1353

Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430

Nonequilibrium Sorption in Soil/Bentonite Barriers, 411

Oscillating Tidal Barriers and Random Waves, 694

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Wave Interactions with Vertical Slotted Barrier, 1337

When the Levee Inflates, 1411

Bars

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Base course

Analysis of Granular Bases Using Discrete Deformable Blocks, 1267

Base isolation

Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077

Time-Delay Compensation in Active Control of Structures, 330

Basements, building

Cellar Performance (Available in Structural Engineering Special Issue only), 1493

Simulation Modeling and Management of a Large Basement Construction Project, 100

Basins

Modeling the Nile Basin Under Climatic Change, 803

Batch processing

Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375

Bathymetry

Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186

Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345

Batten

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Bayesian analysis

2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819

Bayesian Prediction of Elastic Modulus of Concrete, 1034

Bayesian Updating of Fragilities with Application to RC Frames, 1125

Estimation of Biokinetic Parameters for Unsaturated Soils, 490

Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263

Bays

Eutrophication Model for a Coastal Bay in Hong Kong, 449

Beach nourishment

Laboratory Study of Beach Nourishment Behavior, 1349

Beaches

2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819

Coastal Dynamics '97, 1551

Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325

Beam columns

Beam-Column Method for Tieback Walls, 530

Capacity of Thin-Walled I-Section Beam-Columns, 1063

Comparison of BS 5950 and AISC-LRFD Codes of Practice, 1396

Composite Girder Design of Cable-Stayed Bridges, 1401

Design of Lipped Channel Columns, 1040

Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010

Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028

Stress-Resultant Plasticity for Frame Structures, 371

Summary of SAC Case Study Building Analyses, 1012

Test of Welded Beam-to-Column Subassemblages. I: Global Behavior, 1157

Tests of Fixed-Ended Plain Channel Columns, 1039

Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Beams

Application of Wavelet Theory for Crack Identification in Structures, 224

Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267

Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137

SUBJECT INDEX

Bedforms

- Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024
- Castellated Beam Web Buckling in Shear, 1154
- Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122
- Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
- Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285
- Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115
- Exact Analysis of Nonprismatic Beams, 361
- External Plate Reinforcement for Concrete Beams, 1180
- Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131
- Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120
- Flexural Deformability of Reinforced Concrete Beams, 1139
- Generalized Warping Torsion Formulation, 249
- Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138
- Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
- Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123
- Plastic Collapse Analysis of T-Beams Under Bending, 307
- Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092
- Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
- Smart Prestressing with Shape-Memory Alloy, 342
- Solution of Beam on Elastic Foundation by DQEM, 373
- Specifications for Structural Steel Beams with Web Openings, 1597
- State of the Arts, 1454
- Structural Damage Detection Using Artificial Neural Networks, 838
- Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150
- Torsional Restraint Against Elastic Lateral Buckling, 1156
- Beams, supports**
- Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140
- Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141
- Bearing capacity**
- Analysis of Cone Resistance: Review of Methods, 538
- Behavior of Nonlinearly Restrained Slender Bridge Piers, 71
- Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112
- Capacity of Thin-Walled I-Section Beam-Columns, 1063
- Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125
- Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549
- End Bearing Capacity of Drilled Shafts in Rock, 579
- Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232
- Muscle Made of Carbon Fiber, 1410
- PCC Airfield Pavement Response During Thaw-Weakening Periods, 87
- Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613
- Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051
- Strength and Deformability of Wood beneath Bolted Connectors, 1046
- Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550
- Bearings**
- Behavior of Elastomeric Bridge Bearings: Computational Results, 73
- Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333
- Misplacement of Launching Bearings in PC Launched Bridges, 75
- Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236
- Stress Distribution at PTFE Interface in Cylindrical Bearing, 77
- Bed load**
- Comparison of Coupled and Semicoupled Numerical Models for Alluvial Channels, 741
- Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339
- Effects of Sediment Transport on Bed Friction and Turbulence, 1343
- Sediment Control at Water Intakes Along Sand-Bed Rivers, 716
- Bed load movement**
- Effect of Bed-Load Movement on Flow Friction Factor, 665
- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739
- Prediction of Live-Bed Scour at Bridge Abutments, 722
- Bed material**
- Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717
- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Global Identification of Surface Irrigation Parameters, 869
- Bed movements**
- Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774
- Bed ripples**
- Free Surface Flow over Permeable Wavy Bed, 757
- Bed roughness**
- Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738
- Three-Dimensional Numerical Model for Flow through Natural Rivers, 642
- Bedforms**
- Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357

Bedforms

Effect of Bed-Load Movement on Flow Friction Factor, 665

Free Surface Flow over Permeable Wavy Bed, 757

Upper-Regime Plane Bed, 773

Bedrock

Below Boston's New Bridge, 1528

The Deep (Available in Geo-Environmental Special Issue only), 1517

Beds

Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766

Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772

Bench marks

Benchmarking for Design of Major Airports Worldwide, 1246

Performance of Concrete Placing in Hong Kong Buildings, 153

Bending

Behavior and Strength of Laminated Glass, 210

Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368

Bending Energy Dissipation of Simplified Single-Layer Stranded Cable, 306

Bending Solution for Thick Plates with Quadrangular Boundary, 205

Corrected Solution of Clamped Ring Plate with Edge Point Load, 292

Ductility of Steel Short Cylinders in Compression and Bending, 227

Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211

Flexural Capacity of Pressurized Steel Pipe, 1061

Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136

Plastic Collapse Analysis of T-Beams Under Bending, 307

Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150

Bending moments

Axial and Bending Behavior of Composite Walling, 1107

Beam-Column Method for Tieback Walls, 530

Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142

Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097

Benefit cost analysis

Economic Evaluation of Design Codes—Case of Seismic Design, 11

Getting the GIST of Costs, 1478

Optimization Modeling for Sewer Network Management, 187

Benefits

Benefits from Including Wetland Component in Water Supply Projects, 1305

Bottoms Up, 1534

Models of Construction Innovation, 167

Partnering: Agreeing to Agree, 945

1998 ASCE TRANSACTIONS

Bentonite

Internal Shear Strength of Three Geosynthetic Clay Liners, 612

Permeation of Sand-Processed Clay Mixtures with Calcium Chloride Solutions, 547

Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Bents

Construction of the New Coleman Bridge: Fifth Roebling Lecture, 1997, 160

Benzene

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408

Blaxial loads

Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305

Bids

Bidding Considerations in Developing Countries, 162

Bidding Practices of Subcontractors in Colorado, 166

Competitive Bidding Strategy Model and Software System for Bid Preparation, 139

Competitive Tendering Practice in Chinese Construction, 158

Contractor Selection Process for Taipei Mass Rapid Transit System, 925

Lane Rental—Innovative Way to Reduce Road Construction Time, 188

New Spin on Bid Sets, 1487

Subcontractors' Bidding Decisions, 151

A Tale of Two Bids, 1421

Bifurcations

Determination of Bifurcation and Limit Points, 313

Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266

Binders, materials

Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986

Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974

Biochemical oxygen demand

Trends in BOD/DO Modeling for Wasteload Allocations, 495

Biodegradation

Anaerobic Treatment of Low-Strength Domestic Wastewater Using an Anaerobic Expanded Bed Reactor, 452

Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396

Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826

Estimation of Biokinetic Parameters for Unsaturated Soils, 490

Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

Three-Dimensional Model for Subsurface Transport and Biodegradation, 412

Biofilm

- Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475
- Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536
- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402

Biographies

- Karl Terzaghi: The Engineer as Artist, 1580

Biological operations

- Soil Bioengineering Takes Root, 1474

Biological properties

- Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363

Biological treatment

- Clearing the Air, Biologically, 1495
- Comparative Kinetics of Bacterial Reduction of Chromium, 424
- Comparison of Autotrophic and Mixotrophic Biofilters for H₂S Removal, 415
- Computational Issues for Optimal In-Situ Bioremediation Design, 1286
- Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514
- Derivation of Mean Cell Residence Time Formula, 428
- Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297
- Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453
- Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536
- Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557
- Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461
- Monitoring Biofilters Used for Air Pollution Control, 1370
- Oil in the Soil, 1523
- Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393
- Temperature Responses of Biological Phosphorus-Removing Activated Sludge, 397
- Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Biomass

- Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461
- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402

Biomechanics

- Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232

Biomedical engineering

- Theoretical and Experimental Investigation of Helical Cardiac Leads, 214

Blast effects

- The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002
- The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003

- The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001

Blast loads

- Blast Loads Versus Point Loads: The Missing Factor, 237
- Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258
- Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403
- The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002
- Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- Walls of Defense, 1437

Blasting

- Management of Solid Waste from Abrasive Blasting, 1369
- Walls of Defense, 1437

Blocks

- Dynamics of Rigid Block Due to Horizontal Ground Motion, 294
- Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Boilers

- The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Bolts

- Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062
- Tension Control Bolts: Strength and Installation, 58

Bonding

- Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244
- Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
- Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
- Effect of Column Parameters on FRP-Confined Concrete, 136
- Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
- Investigating Performance of Bonded Concrete Overlays, 996
- Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255
- Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126

Border irrigation

- Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882

Boreholes

- A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827

Boring

- Drainage Culvert Installation by Jacking and Boring, 1398

Bosnia

- Rebuilding Bosnia, 1419

Boston

- Below Boston's New Bridge, 1528

Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327

Residence Time of Freshwater in Boston's Inner Harbor, 1333

Bottom ash

Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973

Boundary conditions

Bending Solution for Thick Plates with Quadrangular Boundary, 205

Boundary Conditions for Modeling Transport in Vertical Barriers, 511

Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244

Determination of Velocity in Estuary for Bridge Scour Computations, 720

Free Surface Flow over Permeable Wavy Bed, 757

Free Vibration Analysis of Thick Superelliptical Plates, 222

An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326

Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357

Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341

Resistance and Drag Reduction of Flows of Clay Suspensions, 645

Transient Analysis with Time-Decoupled Pumping Station, 682

Upper-Regime Plane Bed, 773

Upstream Boundary of Reservoir in Dynamic Analysis, 265

Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228

Boundary element method

BEM Solution for Design of Trenches in Multilayered Landfills, 382

Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072

Crack Growth Analysis in Reinforced Concrete Using BEM, 322

Exact Analysis of Nonprismatic Beams, 361

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062

Boundary layer

Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355

Boundary shear

Boundary Shear in Rectangular Ducts and Channels, 652

Bounding surface

Bounding Surface Models Applied to Fatigue of Plain Concrete, 276

Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578

Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282

Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283

Stress-Resultant Plasticity for Frame Structures, 371

Boussinesq equations

Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886

Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Bracing

Behavior of Cross-Bracing in Latticed Towers, 1064

Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082

Continuum Topology Optimization for Concept Design of Frame Bracing Systems, 1085

Design Guidelines for Longitudinal Plate to HSS Connections, 1110

Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121

Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215

Braiding

Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686

Brazil

Modular Neural Networks for Predicting Settlements During Tunneling, 562

Breaking waves

Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325

Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345

Breakwaters

Characteristics of Wave Reflection Spectra, 1358

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Wave Interactions with Vertical Slotted Barrier, 1337

Brick construction

Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55

Brick masonry

Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122

Bricks

Comparative Study of Durability Indices for Clay Bricks, 39

Development of New Durability Index for Clay Bricks, 47

Bridge abutments

Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561

Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664

Prediction of Live-Bed Scour at Bridge Abutments, 722

Bridge construction

Alaska's Last Link, 1536

Balancing Act, 1415

Comparison of Perception Versus Reality in Timber Bridge Performance, 981

A Composite Sketch, 1409

Construction of the New Coleman Bridge: Fifth Roebling Lecture, 1997, 160

High-Performance Powder, 1407

SUBJECT INDEX

Bridges, concrete

Launched Bridges, 1581
Losing Ground, 1443
Mix and Match, 1413
Record Spans in Japan, 1420
Seismic Retrofit Program for Los Angeles Bridges, 849
Shake It Up (Available in Structural Engineering Special Issue Only), 1492

Bridge decks
All Decked Out, 1466
Clear-Water Contraction Scour under Bridges in Pressure Flow, 676
Fatigue Response of Concrete Decks Reinforced with FRP Rebars, 1025
Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133

Bridge design
Case Study of Bridge Design Competition, 67
Dynamic Analysis of Existing Continuous Bridge, 60
Launched Bridges, 1581
Mix and Match, 1413
Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76

Bridge failure
Probabilistic Bridge Scour Estimates, 736

Bridge foundations
Below Boston's New Bridge, 1528

Bridge inspection
Bridge Fatigue Life Estimation From Field Data, 1399
Concrete Bridge Management: From Design to Maintenance, 1393
Connecticut's Bridge Infrastructure Monitoring Program for Assessment, 837
Integration of Bridge Management Systems and Non-destructive Evaluations, 832
Method for Estimating Transition Probability in Bridge Deterioration Models, 833

Bridge loads
Proofload Testing of Deteriorated Steel Girder Bridges, 66

Bridge maintenance
Concrete Bridge Management: From Design to Maintenance, 1393
Method for Estimating Transition Probability in Bridge Deterioration Models, 833
Simulating Highway Infrastructure Management Policies, 938

Bridge tests
Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126

Bridges
Behavior of Elastomeric Bridge Bearings: Computational Results, 73
Capacity of Masonry Arches and Spatial Frames, 1096
Clear-Water Contraction Scour under Bridges in Pressure Flow, 676
Effects of Spatially Varying Ground Motions on Short Bridges, 1128
Evaluation of Existing RC Slab Bridges, 990

Integration of Bridge Management Systems and Non-destructive Evaluations, 832
Method for Estimating Transition Probability in Bridge Deterioration Models, 833
Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236
Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79
Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57
Service-Life Prediction of Deteriorating Concrete Bridges, 1059

Bridges, arch
Service Load Response of Masonry Arch Bridges, 1026

Bridges, box girder
Bridge Prestress Losses in Dry Climate, 69
Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62

Bridges, cable-stayed
Balancing Act, 1415
Below Boston's New Bridge, 1528
Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64
Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65
Cable Stay Conundrum, 1488
Composite Girder Design of Cable-Stayed Bridges, 1401
Czech It Out (Available only in Structural Engineering Special Issue), 1449
Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298
Record Spans in Japan, 1420
Unified Finite Difference Formulation for Free Vibration of Cables, 1165
Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78
Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170

Bridges, composite
Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840

Bridges, concrete
Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135
Casting Hot and Cold, 1439
Concrete Bridge Demolition Methods and Equipment, 70
Concrete Bridge Management: From Design to Maintenance, 1393
Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304
External Plate Reinforcement for Concrete Beams, 1180
Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176
Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

Bridges, concrete

- Launched Bridges, 1581
- Misplacement of Launching Bearings in PC Launched Bridges, 75
- Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
- Shake, Rattle and Hold (Available in Structural Engineering Special Issue Only), 1539
- Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845

Bridges, continuous

- Dynamic Analysis of Existing Continuous Bridge, 60
- Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68

Bridges, girder

- Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68
- Laboratory Tests of Bolted Diaphragm-Girder Connections, 63
- Proofload Testing of Deteriorated Steel Girder Bridges, 66

Bridges, highway

- Bridge Fatigue Life Estimation From Field Data, 1399
- Contraction and Expansion Losses Through Bridge Constrictions, 710
- Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236
- Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032

Bridges, orthotropic

- All Decked Out, 1466

Bridges, piers

- Behavior of Nonlinearly Restrained Slender Bridge Piers, 71
- Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135
- Determination of Velocity in Estuary for Bridge Scour Computations, 720
- Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240
- Flow Around Bridge Piers, 681
- Local Scour at Piled Bridge Foundations, 698
- Local Scour at Skewed Piers, 737
- Scale Effect in Pier-Scour Experiments, 723
- Three-Dimensional Simulation of Scour-Inducing Flow at Bridge Piers, 708

Bridges, railroad

- Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

Bridges, spans

- Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295
- Bridge Flutter Derivatives at Vortex Lock-In, 1074
- A Composite Sketch, 1409
- Record Spans in Japan, 1420

Bridges, steel

- Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991
- Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127

1998 ASCE TRANSACTIONS

- Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840

Bridges, suspension

- All Decked Out, 1466
- Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331
- Bridge Within a Bridge, 1505
- Flutter Stability of Very Long Suspension Bridges, 72
- Positively Not Pedestrian, 1436
- Record Spans in Japan, 1420

Bridges, truss

- Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159
- Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831

Brines

- Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960
- Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711

Brittle fractures

- Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014
- Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013

Brittleness

- Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639

Bromides

- Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486
- Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425

Bubbles

- Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

Buckling

- Buckling of Unilaterally Constrained Infinite Plates, 221
- Castellated Beam Web Buckling in Shear, 1154
- Cold-Formed Steel Members with Multiple Longitudinal Intermediate Stiffeners, 1151
- Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299
- Design Method for Buckling Failure of Plate Elements, 1117
- Design of Lipped Channel Columns, 1040
- Design of Trusses under Uncertain Loads Using Convex Models, 1060
- Detailing for Reinforcement Stability in RC Members, 1093
- Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103
- FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163
- Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
- Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

SUBJECT INDEX

Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357

Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044

Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288

Plastic Collapse Analysis of T-Beams Under Bending, 307

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042

Strength of Plate Girder Web Panels under Pure Shear, 1045

Strength of Slender Reinforced Concrete Columns, 1133

Strength of Webs Subjected to Compressive Edge Loading, 9

Tests of Fixed-Ended Plain Channel Columns, 1039

Torsional Restraint Against Elastic Lateral Buckling, 1156

Building codes

Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

Client/Server Framework for On-Line Building Code Checking, 106

Combining Snow and Earthquake Loads for Limit States Design, 10

Comparison of BS 5950 and AISC-LRFD Codes of Practice, 1396

Domesticating Steel, 1408

Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073

Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992

Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Period Formulas for Concrete Shear Wall Buildings, 1071

Proportioning: Missing Step in Model Building Code Seismic Design, 1388

Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Building design

Building Between Buildings (Available in Structural Engineering Special Issue Only), 1540

Comment on the Overall Thermal Transfer Value (OTTV) for Building Energy Control, 56

Express Design, 1483

Framing a Work of Art, 1429

Hovering Over the Harbor, 1452

A Museum for the Heavens, 1456

Priorities in Building Envelope Design, 42

State of the Arts, 1454

Wind Tunnel Studies of Buildings and Structures, 1610

Building frames

Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029

Buildings

Active Attenuation of Building Structural Response Using Robust Control, 272

Comparative Study of Durability Indices for Clay Bricks, 39

Buried pipes

Construction Robots: The Search for New Building Technology in Japan, 1555

Effects of Construction on Structures, 1561

Factors That Affect Process Quality in the Life Cycle of Building Projects, 163

Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573

Kansas State University Architectural Engineering, 40

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003

Performance Comparison for Thermal Comfort Sensors, 49

Quantity Estimating of Building with Logarithm-Neuron Networks, 184

Buildings, nonresidential

Express Design, 1483

Hovering Over the Harbor, 1452

Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Buildings, office

Cellar Performance (Available in Structural Engineering Special Issue only), 1493

Federal Triangle Finale, 1451

The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002

Buildings, residential

Domesticating Steel, 1408

Fall Protection Analysis for Workers on Residential Roofs, 189

Observed and Computed Settlements of Two Shallow Foundations on Sand, 581

Uncertainty and Home Builders' Adoption of Technological Innovations, 179

Bulk density

Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790

Buoyancy

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

Buoyant jets

Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679

Initial Dilution Equations for Buoyancy-Dominated Jets in Current, 658

Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711

Buried cables

Averting Excavation Disaster, 898

Buried pipes

Averting Excavation Disaster, 898

Elastic Analysis of Buried Pipes under Surface Patch Loadings, 591

Flexural Capacity of Pressurized Steel Pipe, 1061

Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828

Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619

Bus stops

Bus stops

Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225

Bus usage

Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Buses

Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Cable cars

Carriage Position Adjustment of Triangular Running Skyline System, 1067

Cables

Bending Energy Dissipation of Simplified Single-Layer Stranded Cable, 306

Cable Stay Conundrum, 1488

Carriage Position Adjustment of Triangular Running Skyline System, 1067

Experimental Determination of Frequencies and Tension for Elastic Cables, 336

Investigation into Cause of Failure of 22 kV PILC Cable, 1007

Laboratory Tests of Cable-Based Roof Moisture Detection System, 54

Positively Not Pedestrian, 1436

Unified Finite Difference Formulation for Free Vibration of Cables, 1165

Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78

Cadmium

Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450

Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Calculators

Using a Programmable Calculator to Find ϕV_u for Steel Beams, 1395

Calibration

Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420

Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262

Genetic Algorithms for Calibrating Water Quality Models, 398

Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512

Models of Storm Sewers Discharge: 2. Calibration and Verification, 446

New Methodology for Calibrating the Lowry Model, 1276

Sampling Design Methods for Water Distribution Model Calibration, 1318

Simulation of Stationary Non-Gaussian Translation Processes, 220

Structural Identification: Analytical Aspects, 1114

Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181

1998 ASCE TRANSACTIONS

California

California and the World Ocean '97, 1549

Cementing the Future, 1531

Light Rail as Planned, 1442

Microtunneling: An Owner's Perspective, 1391

Shake It Up (Available in Structural Engineering Special Issue Only), 1492

Superfund Success, Superfast, 1530

California bearing ratio

Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Cameras

Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181

Canada

Rapid Redecking, 1445

Canal design

Influence of Canal Geometry and Dynamics on Controllability, 852

Canals

Canal Control Algorithms Currently in Use, 851

Canal Control Algorithms Formulations, 854

Classification of Canal Control Algorithms, 850

Development and Evaluation of Canal Automation Algorithm CLIS, 855

Improved Proportional-Integral (PI) Logic for Canal Automation, 857

Influence of Canal Geometry and Dynamics on Controllability, 852

Introduction of Smith Predictor into Dynamic Regulation, 856

Nondimensional Expression of Unsteady Canal Flow, 858

PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875

Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789

Test Cases for Canal Control Algorithms, 853

Canopies

Evapotranspiration of Melaleuca Forest in South Florida, 807

Cantilevers

State of the Arts, 1454

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Canyons

Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Capacity

Method to Estimate Water Storage Capacity of Capillary Barriers, 553

Refining the Definition of Field Capacity in the Literature, 880

Capital costs

Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288

SUBJECT INDEX

Capital improvement

Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273

Capsules

Design of Pipelines to Transport Neutrally Buoyant Capsules, 780

Carbon

Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137

Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024

Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135

Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125

Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118

Muscle Made of Carbon Fiber, 1410

Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133

Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126

Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130

Carbon dioxide

Chemical Reactions and Gas Transfer in Natural Waters, 384

Carbonation

Influence of Carbonation on Leaching of Cementitious Wasteforms, 426

Carcinogens

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

Careers

Career Fitness, 909

Executive Fellowship Program: Lessons for Engineers, 918

Managing Your Career in an Era of Change, 1019

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Case reports

Case Study of Slope Failures at Spilmans Island, 626

Civil Engineering Education Through Case Studies of Failures, 994

The Civil Engineering Resource Library, 108

Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558

Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594

Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549

Engineering Approaches to Ecosystem Restoration, 1562

Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373

Estimation of Municipal Solid Waste Landfill Settlement, 525

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Grouts and Grouting: A Potpourri of Projects, 1571

Interpreting Settlement Profiles of Earth Dams, 611

Cements

Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57

Performance of Three-Dimensional Slope Stability Methods in Practice, 623

Risk-Based Correction Action and Brownfields Restoration, 1590

Role of Geophysics in Expedited Site Characterization: Case History, 1365

Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619

Summary of SAC Case Study Building Analyses, 1012

Transportation Planning and Air Quality III: Emerging Strategies and Working Solutions, 1603

Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280

Using Object-Communication for Design Standards Modeling, 105

Verification and Validation of Case-Based Prequalification System, 109

Winning ADR Battles, 934

Cast iron

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Catchments

Average Areal Precipitation by Percentage Weighted Polygon Method, 799

Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802

Modeling Spatial Variability of Rainfall Over a Catchment, 806

Cathodic protection

Chloride Transport in Concrete Subjected to Electric Field, 979

Cavities

Blast Loads Versus Point Loads: The Missing Factor, 237

Cavity expansion

Analysis of Cone Resistance: Review of Methods, 538

CD-ROM

High-Tech Text, 1459

New Spin on Bid Sets, 1487

Ceilings

Santa Fe Sensation, 1450

State of the Arts, 1454

Cellular structures

Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62

Cementation

Leaching Effects on the Properties of Cemented Sands in Kuwait, 618

Properties of Artificially Cemented Carbonate Sand, 572

Cements

Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125

Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216

Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639

Interface Behavior in Steel Fiber/Cement Composites under Tension, 332

Cements

- Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
Plastic-Damage Model for Interfaces in Cementitious Materials, 302

Centrifuge

- Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620
Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
Performance of Geosynthetic Reinforced Slopes at Failure, 587
Centrifuge model
Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637
Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561
Climatic Soil Freezing Modeled in Centrifuge, 636
Foundation Liquefaction Countermeasures for Earth Embankments, 573
Predicting Frost Heave Using FROST Model with Centrifuge Models, 84
Seismic Modeling of Gravity Quay Walls. I: Centrifuge Response, 564

Centroid

- Design of Lipped Channel Columns, 1040
Tests of Fixed-Ended Plain Channel Columns, 1039

Change

- Information Model for Managing Design Changes in a Collaborative Environment, 98

Change orders

- A Better Way to Estimate and Mitigate Disruption, 197
Construction Contract Claims, Changes & Dispute Resolution, 1554

Channel beds

- Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894
Prediction of Discontinuity in Stage-Discharge Rating Curves, 677
Upper-Regime Plane Bed, 773

Channel bends

- Flow at a 90° Equal-Width Open-Channel Junction, 668
Side-Weir Flow in Curved Channels, 873
Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729

Channel design

- Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Channel flow

- Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761
Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762
Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346
Friction Slope in Depth-Averaged Flow, 651
Side-Weir Flow in Curved Channels, 873

Channels, waterways

- Calculating Average Filling Rock Diameter for Gabion-Mattress Channel Design, 760

1998 ASCE TRANSACTIONS

- Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669
Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745
Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738
Friction Slope in Depth-Averaged Flow, 651
Inland Navigation: Locks, Dams, and Channels, 1578
Lateral Flow Exchange in Transient Compound Channel Flow, 650
Recirculating Flow Generated by Line-Source Bubble Plumes, 754
Roughness of Loose Rock Riprap on Steep Slopes, 667
Side-Weir Flow in Curved Channels, 873
Spatial B-Jump at Sudden Channel Enlargements with Abrupt Drop, 724
Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774
Statistics of Sediment Transport in Goodwin Creek, 775
Chaos
Lagrangian/Eulerian Description of Dynamic System, 317
Characteristics
Application of Geotechnical Principles in Pavement Engineering, 1544
Energy Estimates for Discretization Errors in Water Hammer Problems, 692
Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870
Charts
Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168
Check valves
Hydraulics of "Duckbill" Elastomer Check Valves, 693
Chemical damage
Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
Chemical grouting
Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960
Chemical oxygen demand
Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475
Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374
Chemical reactions
Chemical Reactions and Gas Transfer in Natural Waters, 384
Decontamination of U-Rich Waters by Granular Iron, 377
Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
Mercury Disposal Via Sulfur Reactions, 488
NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505
Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978
Quantity of Alkali Silica Gel and Its Effect on Concrete Properties, 964

SUBJECT INDEX

Chemical spills

Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731

Chemical treatment

Modeling Water Treatment Chemical Disinfection Kinetics, 469

Chemicals

Evaluating Health Risks From Ground-Water Contaminants, 429

Growth Kinetics of Mixed Cultures under Chlorate-Reducing Conditions, 496

Nonhydrostatic Model for Surface Irrigation, 877

Physico-Chemical Behavior of Dry Silty Clays, 568

Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825

Chemostat

Growth Kinetics of Mixed Cultures under Chlorate-Reducing Conditions, 496

Chicago

Shoring Up Lake Shore Drive, 1472

China, People's Republic of

Competitive Tendering Practice in Chinese Construction, 158

Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180

Neural Network Approach to Classification of Traffic Flow States, 1261

Chlorides

Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998

Chloride Transport in Concrete Subjected to Electric Field, 979

Influence of Service Cracking on Reinforcement Steel Corrosion, 952

Chlorination

Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

Chlorine

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376

In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481

Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Reductive Dechlorination of DNAPL Trichloroethylene by Zero-Valent Iron, 1378

Chromatographic analysis

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

Chromium

Comparative Kinetics of Bacterial Reduction of Chromium, 424

Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513

Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514

In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Circular channels

Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894

End Depth in Circular Channels, 748

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

Wave Propagation in Circular Jettied Channels, 1322

Cisterns

Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470

Cities

Sim City of Angels, 1460

Civil engineering

Artificial Neural Networks for Civil Engineers: Advanced Features and Applications, 1546

Civil Engineering Education Through Case Studies of Failures, 994

Computing in Civil Engineering, 1553

Foundation for Research in Computing in Civil Engineering, 92

GIS Technology for Civil Engineering Education, 1016

Tomorrow's Civil Systems Engineer—The Master Integrator, 1017

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Civil engineers

Into the 21st Century: A Great Time to Be a Civil Engineer, 919

Managing Your Career in an Era of Change, 1019

Out of Sight, Out of Time, 1431

Personality of Civil Engineers, 931

Cladding

Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Securing the Stone, 1412

Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48

Claims

Consequences of Construction Conflict: A Hong Kong Perspective, 926

Construction Contract Claims, Changes & Dispute Resolution, 1554

Clamps

Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168

Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228

Clamps

Clarifiers

Clarifiers

Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489

Classification

Classification of Canal Control Algorithms, 850

Classification System for Rigid and Semirigid Connections, 1106

Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95

Neural Network Approach to Classification of Traffic Flow States, 1261

Tornado Aftermath: Questioning the Tools (Available Structural Engineering Special Issue Only), 1538

Clay liners

Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528

Internal Shear Strength of Three Geosynthetic Clay Liners, 612

A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502

Slope Stability of Geosynthetic Clay Liner Test Plots, 584

Clay soils

Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604

Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609

Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557

Lateral Load Behavior of Full-Scale Pile Group in Clay, 570

Permeation of Sand-Processed Clay Mixtures with Calcium Chloride Solutions, 547

Side Shear Induced in Drilled Shaft by Suction Change, 596

Clays

Base Stability of Deep Excavation in Anisotropic Soft Clay, 600

Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532

Damping at Small Strains in Cyclic Simple Shear Test, 580

Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078

Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554

Modular Neural Networks for Predicting Settlements During Tunneling, 562

Observed Performance of Multipropped Excavation in Stiff Clay, 608

Physico-Chemical Behavior of Dry Silty Clays, 568

Resistance and Drag Reduction of Flows of Clay Suspensions, 645

Settlement of Embankments on Soft Clays, 551

Settlement of Embankments on Soft Clays, 586

Should Grouted Anchors Have Short Tendon Bond Length?, 535

Stress-Strain-Time Function of Clay, 552

Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550

Client relationships

Pulling Ahead, 1503

Quantification of Construction Clients' Needs Through Paired-Comparisons, 907

Small Firms, Big Advantages, 1515

Climatic changes

Effective Temperature Differential in Concrete Pavements, 1208

Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Modeling the Nile Basin Under Climatic Change, 803

Climatology

Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073

Clogging

Filtration and Drainage in Geotechnical/Geoenvironmental Engineering, 1566

Closed conduit flow

Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654

Closed form solutions

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604

Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291

Deflections of Composite Beams with Web Openings, 1147

Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206

Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Temperature and Curling Stress in Concrete Pavements: Analytical Solutions, 1205

Closed loop systems

Introduction of Smith Predictor into Dynamic Regulation, 856

Open-Close Loop Active Control of Articulated Leg Platform, 297

Coastal engineering

California and the World Ocean '97, 1549

Coastal Dynamics '97, 1551

A Mechanism for the Formation of Lutoclines by Waves, 1340

Ports '98, 1587

Coastal environment

California and the World Ocean '97, 1549

Coastal Dynamics '97, 1551

Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325

Initial Motion of Sediment in Oscillatory Flow, 1331

Longshore Sediment Flux in Water Column and Across Surf Zone, 1336

SUBJECT INDEX

- Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295
- Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
- Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390
- Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713
- Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700
- Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730
- Use of Neural Networks in Design of Coastal Sewage Systems, 699
- Coastal management**
- Coastal Flood Risk Assessment, 1348
- Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332
- Coastal plains**
- Stability of Natural Slopes in the Coastal Plain, 1598
- Coastal processes**
- Coastal Dynamics '97, 1551
- Estuarine and Coastal Modeling, 1564
- Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335
- Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323
- Coastal structures**
- Characteristics of Wave Reflection Spectra, 1358
- Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582
- Wave Phase Shift at Coastal Structures, 1334
- Coating**
- Do Coated Pipes Last Longer?, 1499
- Surface-Treated Slag Concrete: Assessing Performance Under Cyclic Wetting, 977
- Codes**
- Dynamic Analysis of Existing Continuous Bridge, 60
- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Future Fire Codes, 1453
- Hybrid Environment for Standards Processing, 107
- Seismic Performance of High-Strength Concrete Columns, 1052
- Coefficients**
- Analysis of Recirculation Equations Using Mean Multiplicative Error, 386
- Flow at a 90° Equal-Width Open-Channel Junction, 668
- One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732
- Predicting Longitudinal Dispersion Coefficient in Natural Streams, 643
- Present Status of Second Order Closure Turbulence Models. II: Applications, 270
- Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
- Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501

Colonization

- Cohesionless sediment**
- Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790
- Cohesionless soils**
- General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635
- Linear Representation of Steady-State Line for Sand, 640
- Mechanics of Granular Materials at Low Effective Stresses, 25
- Observed and Computed Settlements of Two Shallow Foundations on Sand, 581
- Cohesive sediment**
- Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790
- Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772
- A Mechanism for the Formation of Lutoclines by Waves, 1340
- Cohesive soils**
- Stress-Strain-Time Function of Clay, 552
- Coking**
- Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974
- Cold regions**
- Cold Regions Impact on Civil Works, 1552
- Evaluation of Traffic Markings in Cold Regions, 1199
- Martian and Lunar Cold Region Soil Mechanics Considerations, 35
- Cold weather construction**
- Casting Hot and Cold, 1439
- Cold Regions Impact on Civil Works, 1552
- Cold-formed steel**
- Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392
- Axial Fatigue Performance of Cold-Formed Steel Sections, 1041
- Cold-Formed Steel Members with Multiple Longitudinal Intermediate Stiffeners, 1151
- Design Method for Buckling Failure of Plate Elements, 1117
- Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
- Tests of Fixed-Ended Plain Channel Columns, 1039
- Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150
- Collapse**
- The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001
- Physico-Chemical Behavior of Dry Silty Clays, 568
- Plastic Collapse Analysis of T-Beams Under Bending, 307
- Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447
- Collapsible soils**
- Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589
- Colonization**
- Role of Lunar Development in Human Exploration of the Solar System, 30

Colorado

Colorado

- Bidding Practices of Subcontractors in Colorado, 166
- Coldhearted Building, 1500

Columns

- Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054
- Confinement Reinforcement Design Considerations for Ductile HSC Columns, 1134
- Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174
- Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Design of Lipped Channel Columns, 1040
- Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958
- Effect of Column Parameters on FRP-Confined Concrete, 136
- Finite-Element Model for Confined Concrete Columns, 1135
- High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175
- Leipholz Column with Shear and Compressibility, 223
- Model of Concrete Confined by Fiber Composites, 1137
- Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
- Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115
- Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305
- Santa Fe Sensation, 1450
- Seismic Performance of High-Strength Concrete Columns, 1052
- Small-Column Compression Tests on Concrete Confined by WWF, 1053
- Strength of Slender Reinforced Concrete Columns, 1133
- Tests of Fixed-Ended Plain Channel Columns, 1039
- Transmission of Interior Concrete Column Loads through Floors, 1091

Combined sewers

- Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480
- Residence Time of Freshwater in Boston's Inner Harbor, 1333

Communication

- Communication and Career Advancement, 910
- Critical Communications Variables, 146
- Net Gains, 1522

Communication skills

- Communication and Career Advancement, 910
- Critical Communications Variables, 146
- Speak Out: The Engineer as Communicator, 908
- Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Community planning

- Higher Ground, 1501

Community relations

- Lane Rental—Innovative Way to Reduce Road Construction Time, 188
- Step by Step, 1490

1998 ASCE TRANSACTIONS

Commuting patterns

- Investigation on Latent Factors Affecting Route Diversion Intentions, 1242

- Spatial Variations in Travel Behavior within Greater Toronto Area, 1218

Compacted soils

- Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536

Compaction

- Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609
- Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214
- Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589
- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

Comparative studies

- Alternative Landfill Covers Pass the Test, 1496
- Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270
- Comparing Two Algorithms to Add Large Strains to Small-Strain FE Code, 321
- Comparison of BS 5950 and AISC-LRFD Codes of Practice, 1396
- Comparison of Coupled and Semicoupled Numerical Models for Alluvial Channels, 741
- Comparison of U.S. Project Delivery Systems, 190
- State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293
- Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162

Competition

- Case Study of Bridge Design Competition, 67
- How to Succeed in Business..., 1511
- Managing Your Career in an Era of Change, 1019
- Pulling Ahead, 1503

Competitive bidding

- Competitive Bidding Strategy Model and Software System for Bid Preparation, 139
- Competitive Tendering Practice in Chinese Construction, 158
- Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180

Compliance

- Client/Server Framework for On-Line Building Code Checking, 106

Composite beams

- Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118
- Deflection of Steel-Concrete Composite Beams with Partial Shear Interaction, 1149
- Deflections of Composite Beams with Web Openings, 1147
- FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145
- Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300
- Nonlinear Analysis of Composite Beams with Deformable Shear Connectors, 1148
- Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090

SUBJECT INDEX

Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27

Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254

Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119

Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130

Composite columns

Axially Loaded Concrete-Filled Steel Tubes, 1146

Composite materials

Actions for Verification of RC Structures with FRP Bars, 132

Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135

A Composite Sketch, 1409

Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958

Dynamic Instability of Tires Under Asymmetric Loads, 20

Effect of Transition Aone on Elastic Stresses in Concrete Materials, 987

Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131

Interface Behavior in Steel Fiber/Cement Composites under Tension, 332

Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951

State of Restored Practice Review in FRP Composite Piling, 127

Triaxial Composite Model for Basic Creep of Concrete, 323

Ultrasonic Techniques to Characterize Pultruded Composite Members, 129

Composite structures

Applications of FEM on Free and Forced Vibration of Laminated Shells, 204

Axial and Bending Behavior of Composite Walling, 1107

Composite Girder Design of Cable-Stayed Bridges, 1401

Confined Concrete Subjected to Uniaxial Monotonic Loading, 363

Design Guide for Partially Restrained Composite Connections, 1144

Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352

Dynamic Instability of Laminates Subjected to Temperature Field, 347

Effect of Column Parameters on FRP-Confined Concrete, 136

Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121

Fatigue Response of Concrete Decks Reinforced with FRP Rebars, 1025

Guided Waves in Multilayered Plates for Internal Defect Detection, 246

Model of Concrete Confined by Fiber Composites, 1137

Performance of Profiled Concrete Shear Panels, 1065

Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62

Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140

Computation

Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141

Tire Contact Using Two-Dimensional Finite Elements, 250

Compressibility

Air-Permeability as Measure of Rock Mass Behavior, 546

Leipholz Column with Shear and Compressibility, 223

Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Compression

Active Control of Tensegrity Systems, 21

Design Method for Buckling Failure of Plate Elements, 1117

Ductility of Steel Short Cylinders in Compression and Bending, 227

Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489

Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216

High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175

Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627

Model Prediction of Rutting in Asphalt Concrete, 1254

A New Method for Studying Stress-Induced Microcracks in Concrete, 968

Physico-Chemical Behavior of Dry Silty Clays, 568

Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288

Structural Concrete: Cracked Membrane Model, 1178

Compression tests

Confined Concrete Subjected to Uniaxial Monotonic Loading, 363

Small-Column Compression Tests on Concrete Confined by WWF, 1053

Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Compressive strength

Bayesian Prediction of Elastic Modulus of Concrete, 1034

Effect of GGBFS Particle-Size Distribution on Mortar Compressive Strength, 975

Effects of Construction Joint in Mass Flowable Concrete, 955

End Bearing Capacity of Drilled Shafts in Rock, 579

Process of In-Place Evaluation of Concrete Strength, 980

Reliability Assessment of High-Strength Concrete Columns, 273

Review of Mechanical Properties of HSC at Elevated Temperature, 959

Computation

Application of Automatic Differentiation to Reservoir Design Models, 1298

Blast Loads Versus Point Loads: The Missing Factor, 237

Colebrook-White Formula for Pipe Flows, 655

Computational Issues for Optimal In-Situ Bioremediation Design, 1286

Contraction and Expansion Losses Through Bridge Constrictions, 710

Computation

- Gradually Varied Flow Solutions in Newton-Raphson Form, 881
- Model for Sight Distance Analysis of Uncontrolled Intersections, 1215
- Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661
- On Stability of Multitime Step Integration Procedures, 303
- Practical Analysis for Partially Restrained Frame Design, 1105
- Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834
- Smooth Surface Approximation for Computing Pit Excavation Volume, 1189
- Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283

Computer aided design

- Entity-Based Models for Computer-Aided Design Systems, 94
- Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170

Computer aided instruction

- The Civil Engineering Resource Library, 108

Computer applications

- Computer-Supported Collaborative Negotiation Methodology, 97
- Computing in Civil Engineering, 1553
- Foundation for Research in Computing in Civil Engineering, 92
- General Formulation for Multilayered Pavement Systems, 1204
- Hybrid Environment for Standards Processing, 107
- Nonlinear Temperature Effects on Multilayered Concrete Pavements, 1211
- Probing Pipelines (available only in Geoenvironmental Special Issue), 1428
- A Summary of Construction Congress V, 940
- Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181
- Virtual Environments and Water Quality Management, 830

Computer hardware

- Riding the Technology Wave, 1458
- Year 2000: Are You Ready?, 1504

Computer models

- General Hydrodynamic Model for Sewer/Channel Network Systems, 683
- Modeling and Analysis of Aggregate Production Operations, 186
- Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776
- Nondimensional Expression of Unsteady Canal Flow, 858

Computer networks

- The Civil Engineering Resource Library, 108
- Client/Server Framework for On-Line Building Code Checking, 106
- Freeway to the Future, 1464
- High-Tech Text, 1459
- Net Gains, 1522

Computer programming

- Defusing the Millennium Bomb, 1461

1998 ASCE TRANSACTIONS

- Year 2000: Are You Ready?, 1504

Computer programs

- Critical Impact Point for Longitudinal Barriers, 1202
- Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203
- Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076

Computer software

- Performance of Three-Dimensional Slope Stability Methods in Practice, 623
- Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397
- Riding the Technology Wave, 1458
- Year 2000: Are You Ready?, 1504

Computerized simulation

- Modeling and Analysis of Aggregate Production Operations, 186
- Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753
- Pendulum Impact Tests on Steel W-Beam Guardrails, 1237
- Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768
- Sim City of Angels, 1460

Computers

- Defusing the Millennium Bomb, 1461
- Riding the Technology Wave, 1458
- Year 2000: Are You Ready?, 1504

Concentrated loads

- Corrected Solution of Clamped Ring Plate with Edge Point Load, 292

Concentration

- Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489
- Initial Settling Rate/Concentration Relationship in Zone Settling, 379

Concrete

- Analysis of Penetration Resistance of Concrete, 248
- Analysis of Rotating Crack Model, 310
- Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054
- Axial and Bending Behavior of Composite Walling, 1107
- Axially Loaded Concrete-Filled Steel Tubes, 1146
- Bayesian Prediction of Elastic Modulus of Concrete, 1034
- Bounding Surface Models Applied to Fatigue of Plain Concrete, 276
- Chloride Transport in Concrete Subjected to Electric Field, 979
- Coldhearted Building, 1500
- Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270
- Concrete Change, 1423
- Confined Concrete Subjected to Uniaxial Monotonic Loading, 363
- Cure for Thinning Concrete, 1532
- Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200

SUBJECT INDEX

- Durability Characteristics of Concrete Columns
 Wrapped with Fiber Tow Sheets, 958
- Dynamic Testing of Full-Scale Concrete and Clay Tile
 Roof Models, 1078
- Effect of Column Parameters on FRP-Confined Con-
 crete, 136
- Effect of Transition Aone on Elastic Stresses in Con-
 crete Materials, 987
- Effects of Construction Joint in Mass Flowable Con-
 crete, 955
- Endochronic Theory of Continuum Damage Mechan-
 ics, 230
- External Plate Reinforcement for Concrete Beams,
 1180
- Fatigue Response of Concrete Decks Reinforced with
 FRP Rebars, 1025
- FRC-Encased Steel Joist Composite Beams Under
 Reversed Cyclic Loading, 1145
- Ground Attack, 1406
- Investigating Performance of Bonded Concrete Over-
 lays, 996
- Investigation of Joint Spalling on a Concrete Runway,
 989
- Material Properties of Self-Flowing Concrete, 982
- Mechanics of Concrete Participation in Cyclic Shear
 Resistance of RC, 1094
- Modeling Concrete Strength with Augment-Neuron
 Networks, 985
- A New Method for Studying Stress-Induced Micro-
 cracks in Concrete, 968
- One-Sided Stress Wave Velocity Measurement in Con-
 crete, 369
- Performance of Profiled Concrete Shear Panels, 1065
- Period Formulas for Concrete Shear Wall Buildings,
 1071
- Permeability and Sorption Properties of Mature Near-
 Surface Concrete, 953
- Plastic Model for Concrete in Plane Stress State. Part I:
 Theory, 282
- Plastic Model for Concrete in Plane Stress State. Part
 II: Numerical Validation, 283
- Plastic-Damage Model for Cyclic Loading of Concrete
 Structures, 316
- Process of In-Place Evaluation of Concrete Strength,
 980
- Quantity of Alkali Silica Gel and Its Effect on Concrete
 Properties, 964
- Recent Trends in Nondestructive Inspections in State
 Highway Agencies, 1000
- Review of Mechanical Properties of HSC at Elevated
 Temperature, 959
- Rotating Crack Model with Transition to Scalar Dam-
 age, 242
- Small-Column Compression Tests on Concrete
 Confined by WWF, 1053
- Smart Prestressing with Shape-Memory Alloy, 342
- Solutions of Multilayer Inclusion Problems Under Uni-
 form Field, 231
- Surface-Treated Slag Concrete: Assessing Performance
 Under Cyclic Wetting, 977
- Testing Concrete in Torsion: Instability Analysis and
 Experiments, 358
- Viscous Hardening Plasticity for Concrete in High-
 Rate Dynamics, 334

Concrete, reinforced

Concrete aggregates

- Municipal Solid Waste bottom Ash as Portland Cement
 Concrete Ingredient, 973
- Potential Challenges for Using Waste Glass in Portland
 Cement Concrete, 978

Concrete blocks

- Prediction of Freezing and Thawing Durability of Con-
 crete Paving Blocks, 957

Concrete construction

- Investigating the Adequacy of Vertical Design Loads
 for Shoring, 993
- Process of In-Place Evaluation of Concrete Strength,
 980

Concrete deterioration

- Mechanical Behavior of Concrete under Physical-
 Chemical Attacks, 340
- Permeability and Sorption Properties of Mature Near-
 Surface Concrete, 953

Concrete, lightweight

- Shake It Up (Available in Structural Engineering Spe-
 cial Issue Only), 1492

Concrete pavements

- Back-Calculation of Concrete Pavement Modulus
 Using Road-Rater Data, 1210
- Effective Temperature Differential in Concrete Pave-
 ments, 1208
- Investigating Performance of Bonded Concrete Over-
 lays, 996
- Joint Spalling in Newly Constructed Concrete Pave-
 ments, 1004
- Nonlinear Temperature Effects on Multilayered Con-
 crete Pavements, 1211
- Performance of Plain Concrete Runway Pavement,
 1005
- Regularization Neural Network for Construction Cost
 Estimation, 141
- Temperature and Curling Stress in Concrete Pave-
 ments: Analytical Solutions, 1205

Concrete placing

- Performance of Concrete Placing in Hong Kong Build-
 ings, 153

Concrete, precast

- Seismic Behavior of Steel Pile to Precast Concrete Cap
 Beam Connections, 76

Concrete, prestressed

- Dynamic Testing of Prestressed Concrete Bridges and
 Numerical Verification, 74
- Launched Bridges, 1581
- Misplacement of Launching Bearings in PC Launched
 Bridges, 75
- Nonlinear Time-Dependent Analysis of Segmentally
 Constructed Structures, 1056
- Nose-Deck Interaction in Launched Prestressed Con-
 crete Bridges, 59
- Polypropylene FRC Bridge Deck Slabs Transversely
 Prestressed with CFRP Tendons, 133
- Structural Concrete: Cracked Membrane Model, 1178

Concrete, reinforced

- Actions for Verification of RC Structures with FRP
 Bars, 132
- Bayesian Updating of Fragilities with Application to
 RC Frames, 1125

- Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027
- Behavior of Nonlinearly Restrained Slender Bridge Piers, 71
- Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024
- Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998
- Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122
- Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
- Crack Growth Analysis in Reinforced Concrete Using BEM, 322
- Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
- Early Form Removal of Reinforced Concrete Slabs, 1390
- Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115
- Evaluation of Existing RC Slab Bridges, 990
- Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131
- FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132
- Finite-Element Model for Confined Concrete Columns, 1135
- Flexural Behavior of Steel Fiber Reinforced Concrete, 962
- Flexural Deformability of Reinforced Concrete Beams, 1139
- Fuzzy Pattern Recognition Model for Diagnosing Cracks in RC Structures, 101
- High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175
- Influence of Service Cracking on Reinforcement Steel Corrosion, 952
- Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138
- Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372
- Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
- Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094
- Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
- Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136
- Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115
- Muscle Made of Carbon Fiber, 1410
- New Ductile Hybrid FRP Reinforced Bar for Concrete Structures, 117
- Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305
- Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79
- Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058
- Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056
- Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123
- Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133
- Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092
- Quantity Estimating of Building with Logarithm-Neuron Networks, 184
- Recent Approaches to Shear Design of Structural Concrete, 1172
- Reliability Assessment of High-Strength Concrete Columns, 273
- Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589
- Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- Service-Life Prediction of Deteriorating Concrete Bridges, 1059
- Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
- Simplified Model of Low Cycle Fatigue for RC Frames, 1143
- Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840
- Strength of Slender Reinforced Concrete Columns, 1133
- Stresses and Crack Angles in Concrete Membrane Elements, 1179
- Stress-Resultant Plasticity for Frame Structures, 371
- Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130
- Structural Concrete: Cracked Membrane Model, 1178
- Thermal Analysis of Reinforced-Concrete Shells, 1036
- Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050
- Concrete slabs**
- Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168
- Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266
- Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119
- Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120
- Shrinkage Cracking of Restrained Concrete Slabs, 301
- Transmission of Interior Concrete Column Loads through Floors, 1091
- Concrete structures**
- Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
- Cost Optimization of Concrete Structures, 1088
- Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057
- Preservation of Historic Thin-Shell Concrete Structures, 36
- Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589
- Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173
- Concrete tests**
- The Search for HPC (Available in Structural Engineering Special Issue only), 1491

SUBJECT INDEX

Connections, bolted

Concretes

Triaxial Composite Model for Basic Creep of Concrete, 323

Conditional probability

Belief Networks for Construction Performance Diagnostics, 99

Estimation of Conditional Non-Gaussian Translation Stochastic Fields, 261

Conduits

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

Cone penetration

Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

Cone penetration tests

Analysis of Cone Resistance: Review of Methods, 538
Assessment of Liquefaction Potential Using Optimum Seeking Method, 593

Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589

Cone penetrometers

Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601

Confidence intervals

Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796

Confidence limit

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Confinement

Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054

Axially Loaded Concrete-Filled Steel Tubes, 1146

Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135

Confined Concrete Subjected to Uniaxial Monotonic Loading, 363

Confinement Reinforcement Design Considerations for Ductile HSC Columns, 1134

Detailing for Reinforcement Stability in RC Members, 1093

Effect of Column Parameters on FRP-Confined Concrete, 136

Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679

Finite-Element Model for Confined Concrete Columns, 1135

High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175

Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960

Linear Representation of Steady-State Line for Sand, 640

Model of Concrete Confined by Fiber Composites, 1137

A New Method for Studying Stress-Induced Microcracks in Concrete, 968

Seismic Performance of Confined Sill Plate Connections, 3

Small-Column Compression Tests on Concrete Confined by WWF, 1053

Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418

Transmission of Interior Concrete Column Loads through Floors, 1091

Conflict

Computer-Supported Collaborative Negotiation Methodology, 97

Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900

Conflict Management Diagnosis at Project Management Organizations, 937

Consequences of Construction Conflict: A Hong Kong Perspective, 926

Conformal mapping

Forces on Edge-Hinged Panels in Gradually Varied Flow, 743

Conical bodies

Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325

Connecticut

Connecticut's Bridge Infrastructure Monitoring Program for Assessment, 837

Connections

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

Classification System for Rigid and Semirigid Connections, 1106

Design Guide for Partially Restrained Composite Connections, 1144

Design Guidelines for Longitudinal Plate to HSS Connections, 1110

Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120

Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013

Securing the Stone, 1412

Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76

Seismic Performance of Confined Sill Plate Connections, 3

Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119

Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120

Walls of Defense, 1437

Connections, bolted

Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112

Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Experimental Analysis of Bolted Connections: Snug Versus Pretensioned Bolts, 1108

Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991

Laboratory Tests of Bolted Diaphragm-Girder Connections, 63

Connections, bolted

Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118

Strength and Deformability of Wood beneath Bolted Connectors, 1046

Connections, welded

Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010

Summary of SAC Case Study Building Analyses, 1012

Test of Welded Beam-to-Column Subassemblages. I: Global Behavior, 1157

Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Connectors, mechanical

Nonlinear Analysis of Composite Beams with Deformable Shear Connectors, 1148

Conservation

Benefits from Including Wetland Component in Water Supply Projects, 1305

Reservoir Operation Studies of Sabarmati System, India, 1285

Consistency

Superelevation, Side Friction, and Roadway Consistency, 1249

Consolidation

Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Self-Weight Subsidence of Saturated Soft Porous Media, 286

Settlement of Embankments on Soft Clays, 551

Settlement of Embankments on Soft Clays, 586

Consolidation, soils

Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638

Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526

Use of Porosity in Models of Consolidation, 235

Constitutive equations

Endochronic Theory of Continuum Damage Mechanics, 230

Constitutive models

Analysis of Rotating Crack Model, 310

Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027

Constitutive Modeling of Unsaturated Drying Deformable Materials, 289

Flexural Behavior of Steel Fiber Reinforced Concrete, 962

Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136

Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282

Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283

Plastic-Damage Model for Interfaces in Cementitious Materials, 302

Rotating Crack Model with Transition to Scalar Damage, 242

Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208

1998 ASCE TRANSACTIONS

Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354

Constitutive relations

Rheological Equations in Asymptotic Regimes of Granular Flow, 245

Semianalytical Solution to Richards' Equation for Layered Porous Media, 890

Constraints

Buckling of Unilaterally Constrained Infinite Plates, 221

Design of Trusses under Uncertain Loads Using Convex Models, 1060

Presence of Nonconvexity in Groundwater Concentration Response Function, 1282

Three-Arc Vertical Curve for Constrained Highway Alignments, 1216

Constriction

Scouring in Long Contractions, 884

Constructibility

Assessment of Constructability Practices Among General Contractors, 51

Construction

Airport Facilities: Innovations for the Next Century, 1542

Analysis of Safety Indicators in Construction, 177

Belief Networks for Construction Performance Diagnostics, 99

Bidding Considerations in Developing Countries, 162

Consequences of Construction Conflict: A Hong Kong Perspective, 926

Construction Contract Claims, Changes & Dispute Resolution, 1554

Construction Labor Productivity Modeling with Neural Networks, 198

Design-Build Alternative: A Contract Method, 944

Design-Build Solutions, 948

Effects of Construction on Structures, 1561

Express Design, 1483

Factors That Affect Process Quality in the Life Cycle of Building Projects, 163

Fall Protection Analysis for Workers on Residential Roofs, 189

Field-Level Management's Perspective of Design/Build, 1405

Fuzzy Logic for Evaluating New Construction Technology, 175

Guidelines for Quarystone Armor Units, 194

Information Management in a Collaborative Multiactor Environment: The COMMIT Approach, 103

An Integrated Project Management System, 922

Liability in Designing for Construction Worker Safety, 50

Managing Industrial Construction Safety in Southeast Texas, 192

Methodology for Prioritizing Cost-Effective Construction Technologies, 161

Model for Public Sector Design-Build Project Selection, 195

Models of Construction Innovation, 167

Optimization of Crew Configurations Using Activity-Based Costing, 159

Performance of Concrete Placing in Hong Kong Buildings, 153

SUBJECT INDEX

Construction methods

- Project-Based Course for Integration of Design and Construction at WPI, 1021
- Resource Leveling of Linear Schedules Using Integer Linear Programming, 168
- River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328
- Shielding Production: Essential Step in Production Control, 140
- Simulation Modeling and Management of a Large Basement Construction Project, 100
- Space 98, 1596
- Statewide Standardization of Site Improvement Standards, 1279
- Time-Lapse Video Applications for Construction Project Management, 164
- Trends in the Construction Needs of Hospital Facilities, 53
- Uncertainty and Home Builders' Adoption of Technological Innovations, 179
- Urban Subsurface Drainage, 1605
- Construction companies**
 - Business Failures: Liabilities of Newness, Adolescence, and Smallness, 193
 - Managing Innovation Information in Engineering and Construction Firms, 903
 - Total Quality Management Implementations and Results: Progress Update, 1389
- Construction control**
 - Lessons from an Outpatient Surgery Center, 46
 - Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173
- Construction costs**
 - Regularization Neural Network for Construction Cost Estimation, 141
 - Tunnel Construction Costs for Tube Transportation Systems, 145
- Construction equipment**
 - Control Improvement for Advanced Construction Equipment, 174
 - Factors of Non Excusable Delays That Influence Contractors' Performance, 923
 - Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176
- Construction industry**
 - Challenges and Opportunities in Construction: A Construction Congress V Summary, 1402
 - Comparison of U.S. Project Delivery Systems, 190
 - Competitive Tendering Practice in Chinese Construction, 158
 - Construction Congress Keynote Address, 941
 - Construction Robots: The Search for New Building Technology in Japan, 1555
 - Developing Standards and International Standards Organizations, 932
 - Identifying Root Causes of Construction Injuries, 147
 - Implementation of Robotics in Building: Current Status and Future Prospects, 143
 - A Merger Manual, 1424
 - Multiskilled Labor Utilization Strategies in Construction, 196
 - The Next 25 Years: The Future of the Construction Industry, 933
- Project Delivery Trends: A Contractor's Assessment, 946
- A Summary of Construction Congress V, 940
- Construction management**
 - A Better Way to Estimate and Mitigate Disruption, 197
 - Calculating Weight Matrix of Neural Network for Resource Leveling, 112
 - Challenges and Opportunities in Construction: A Construction Congress V Summary, 1402
 - Comparison of Delay Analysis Methodologies, 178
 - Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900
 - Determining Schedule Impact: Working Practice, 1404
 - Factors of Non Excusable Delays That Influence Contractors' Performance, 923
 - Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150
 - Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185
 - Interactions Between Construction Planning and Influence Factors, 169
 - Lessons from an Outpatient Surgery Center, 46
 - Linear Scheduling Model: Development of Controlling Activity Path, 171
 - Multimedia for Construction Project Management: Project Navigator, 149
 - Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
 - Quality Improvement Methodology and Implementation, 182
 - Rapid Redocking, 1445
 - Scheduled Departure, 1440
 - Simplified Simulation System for Construction Projects, 148
 - Simulation-Based Scheduling with Continuous Activity Relationships, 152
 - Time-Lapse Video Applications for Construction Project Management, 164
- Construction materials**
 - Comparison of Perception Versus Reality in Timber Bridge Performance, 981
 - Compatibility and Rheological Study of ASR Asphalt Binder, 956
 - Concrete Change, 1423
 - Construction Engineering Approach for Lunar Base Development, 34
 - Framework for Modeling Durability Cost of Structural Systems, 842
 - Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414
 - Making the Grade, 1446
 - Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173
- Construction methods**
 - Balancing Act, 1415
 - Cliffside Correction, 1485
 - Construction Engineering Approach for Lunar Base Development, 34
 - Czech It Out (Available only in Structural Engineering Special Issue), 1449
 - Design and Construction of Earth Retaining Systems, 1558
 - Domesticating Steel, 1408

- Improving Construction Methods: A Story About Quality, 920
- Joint Spalling in Newly Constructed Concrete Pavements, 1004
- Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828
- A Museum for the Heavens, 1456
- Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
- The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001
- Optimization of Crew Configurations Using Activity-Based Costing, 159
- Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599
- Pipelines in the Constructed Environment, 1586
- Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173
- Reliability of Energy Method to Predict Lift Slab Structures Stability, 1006
- Siting of Prison Complex above Abandoned Underground Coal Mine, 614
- Standing Firm: When Ethics are Challenged, 5
- State of the Arts, 1454
- Construction planning**
- Contaminated Soil Management at Construction Sites, 1376
- Interactions Between Construction Planning and Influence Factors, 169
- Construction site accidents**
- Crane Safety on Construction Sites, 1557
- Site Safety: Rights, Risks, and Responsibilities, 1455
- Construction sites**
- Crane Safety on Construction Sites, 1557
- Site-Level Facilities Layout Using Genetic Algorithms, 110
- Consulting engineers**
- Discovering Your Niche, 1537
- How to Succeed in Business..., 1511
- A Merger Manual, 1424
- Pulling Ahead, 1503
- A Stockholder's Story, 1425
- Consulting services**
- The New Environment for Consolidation, 1514
- On-Call Contracting Strategy and Management, 930
- Out of Sight, Out of Time, 1431
- Contact pressure**
- Interference Assemblies, 209
- Contacts**
- Analytic Solutions for Diametral Point Load Strength Tests, 314
- Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243
- Stress Intensity Factors and Displacements in Elastic Contact and Crack Problems, 327
- Tire Contact Using Two-Dimensional Finite Elements, 250
- Container shipping**
- Preparing for Pier A, 1482

- Containment**
- Containing the Cold War's Hot Waste, 1519
- Evaluation of Containment Systems Using Hydraulic Head Data, 443
- Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430
- Site Characterization and Containment Assessment with Dissolved Gases, 442
- Contaminants**
- Alternative Use of Multimed Model for Subtitle D Landfill Applications, 1386
- Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432
- Boundary Conditions for Modeling Transport in Vertical Barriers, 511
- Classification of Flotation Processes in Wastewater Decontamination, 427
- Contaminant Source Solutions with Scale-Dependent Dispersivities, 824
- Contaminated Soil Management at Construction Sites, 1376
- Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396
- Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427
- Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375
- Detecting Accidental Contaminations in Municipal Water Networks, 1301
- Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826
- Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373
- Evaluating Health Risks From Ground-Water Contaminants, 429
- Evaluation of Containment Systems Using Hydraulic Head Data, 443
- Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392
- Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450
- Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492
- Generation of Long-Term Record of Contaminant Transport, 448
- Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366
- HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379
- Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821
- Matrix Approach to Contaminant Transport Potential, 1377
- Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822
- NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477
- Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817

SUBJECT INDEX

- Nonequilibrium Sorption in Soil/Bentonite Barriers, 411
- Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
- Oil in the Soil, 1523
- Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
- Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393
- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438
- Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344
- Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418
- Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731
- Contamination**
- Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382
- Preparing for Pier A, 1482
- Site Investigations of Fuel Spill Migration into Permafrost, 85
- Contingency**
- Drought Contingency Planning: Evaluating the Effectiveness of Plans, 1307
- Continuing education**
- Career Fitness, 909
- Corporate University: Consulting Firm Case Study, 917
- Resources for Ongoing Professional Development, 911
- Toward the Environment and Sustainability Ethic in Engineering Education and Practice, 1020
- Continuous beams**
- Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392
- Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285
- Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050
- Continuum hypothesis**
- Continuum Topology Optimization for Concept Design of Frame Bracing Systems, 1085
- Continuum mechanics**
- Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328
- Endochronic Theory of Continuum Damage Mechanics, 230
- Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
- Simplified Model of Low Cycle Fatigue for RC Frames, 1143
- Contract administration**
- Incentive/Disincentive Contracts: Perceptions of Owners and Contractors, 183
- Lessons from an Outpatient Surgery Center, 46
- Contract terms**
- Effect of Variability on End Product Specifications, 156

Control structures

- Lane Rental—Innovative Way to Reduce Road Construction Time, 188
- Site Safety: Rights, Risks, and Responsibilities, 1455
- Who Pays for Defective Design?, 949
- Contracting**
- Construction Contract Claims, Changes & Dispute Resolution, 1554
- Model for Public Sector Design-Build Project Selection, 195
- On-Call Contracting Strategy and Management, 930
- Contraction**
- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Flow at a 90° Equal-Width Open-Channel Junction, 668
- Supercritical Flow in Chute Contraction, 647
- Contractors**
- Assessment of Constructability Practices Among General Contractors, 51
- Bidding Considerations in Developing Countries, 162
- Bidding Practices of Subcontractors in Colorado, 166
- Contractor Selection Process for Taipei Mass Rapid Transit System, 925
- Environmental Exposure, 1497
- Factors of Non Excusable Delays That Influence Contractors' Performance, 923
- Verification and Validation of Case-Based Prequalification System, 109
- Contracts**
- Design-Build Alternative: A Contract Method, 944
- Incentive/Disincentive Contracts: Perceptions of Owners and Contractors, 183
- Realizing Engineer-Led Design/Build, 1444
- Control**
- Attitude Control of Space Platform Based Tethered Satellite System, 19
- Classification of Canal Control Algorithms, 850
- Development and Evaluation of Canal Automation Algorithm CLIS, 855
- Improved Proportional-Integral (PI) Logic for Canal Automation, 857
- Influence of Canal Geometry and Dynamics on Controllability, 852
- Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455
- Introduction of Smith Predictor into Dynamic Regulation, 856
- Nondimensional Expression of Unsteady Canal Flow, 858
- Test Cases for Canal Control Algorithms, 853
- Control equipment**
- Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
- Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Control structures**
- Structural Ice Control: A Review, 82
- Structural Ice Control Alternatives for Middle Mississippi River, 91

Control systems

Control systems

- Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319
- Canal Control Algorithms Currently in Use, 851
- Canal Control Algorithms Formulations, 854
- Control Improvement for Advanced Construction Equipment, 174
- Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
- Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Integrated Control for Series of Waterway Locks, 1346
- LQG/LTR Control Methodology in Active Structural Control, 262
- Multicriteria Optimization for Design of Structures with Active Control, 22
- PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875
- Reliability-Based Approach to Linear Covariance Control Design, 229
- Semiactive Control Algorithms for Structures with Variable Dampers, 326
- Time-Delay Compensation in Active Control of Structures, 330
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081
- Vibration Control of Flexible Manipulators Using Smart Structures, 28

Conversion

- Quarry Conversion, 1502

Cooling systems

- Coldhearted Building, 1500

Cooling towers

- Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203
- Hyperbolic Cooling Towers with Bulge Imperfections, 359

Cooling water

- Methodology for Predicting Cooling Water Effects on Fish, 447

Cooperation

- Teamwork - the Key to Productivity, 896

Coordinates

- Generalized Warping Torsion Formulation, 249
- Proof of Tienstra's Formula for an External Observation Point, 1184

Coordination

- Comparison of Alternate Signal Timing Policies, 1260
- Information Model for Managing Design Changes in a Collaborative Environment, 98

Copper

- Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Core

- Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285
- Shear Stiffness for Z-Core Sandwich Panels, 1113

Corners

- Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558

1998 ASCE TRANSACTIONS

- Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79

Corporate growth

- A Stockholder's Story, 1425

Corporate planning

- Data-Driven Analysis of "Corporate Risk" Using Historical Cost-Control Data, 144
- Maximizing CEO Performance, 927

Corporations

- Maximizing CEO Performance, 927
- A Stockholder's Story, 1425

Correlation techniques

- Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834

Corrosion

- Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65
- Chloride Transport in Concrete Subjected to Electric Field, 979
- Influence of Service Cracking on Reinforcement Steel Corrosion, 952
- Service-Life Prediction of Deteriorating Concrete Bridges, 1059
- Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845

Corrosion control

- Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64
- Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65
- Ground Attack, 1406
- Positively Not Pedestrian, 1436

Corrosion resistance

- Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998
- Do Coated Pipes Last Longer?, 1499

Corrugated metal pipes

- Do Coated Pipes Last Longer?, 1499
- Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537

Cost allocation

- Cost Allocation for Multiuse Water Systems in Egypt, 876
- Cost Allocation in Urban Infrastructure Funding, 1274

Cost analysis

- Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319
- Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191
- Comparison of U.S. Project Delivery Systems, 190
- Cost Effectiveness and Incremental Cost Analyses: Alternative to Benefit-Cost Analysis for Environmental Remediation Projects, 1362
- Cost Optimization of Concrete Structures, 1088
- Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374
- Optimization of Crew Configurations Using Activity-Based Costing, 159
- Risk-Cost Approach to Interim Drainage Structure Design, 1317

SUBJECT INDEX

Cracks

- Role of Launch Vehicles in Moon-Mars Exploration Program, 32
- Tunnel Construction Costs for Tube Transportation Systems, 145
- Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170
- Cost control**
- Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203
- Data-Driven Analysis of "Corporate Risk" Using Historical Cost-Control Data, 144
- Factors Affecting Contractors' Risk of Cost Overburden, 904
- Factors of Non Excusable Delays That Influence Contractors' Performance, 923
- Cost effectiveness**
- Cost Effectiveness and Incremental Cost Analyses: Alternative to Benefit-Cost Analysis for Environmental Remediation Projects, 1362
- Cost-Effectiveness Analyses of Libya's Water Supply System, 1316
- Methodology for Prioritizing Cost-Effective Construction Technologies, 161
- Nothing Wasted, 1465
- Cost estimates**
- Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191
- Factors Affecting Contractors' Risk of Cost Overburden, 904
- Fuzzy Logic for Evaluating New Construction Technology, 175
- Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185
- Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170
- Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
- Quantity Estimating of Building with Logarithm-Neuron Networks, 184
- Regularization Neural Network for Construction Cost Estimation, 141
- Sampling Method for Cost Estimation of Highway Noise Barrier Infrastructure, 848
- Cost minimization**
- Evolutionary Algorithm for Minimization of Pumping Cost, 111
- Cost savings**
- Automatic Savings, 1463
- Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202
- Lunar Polar Ice: Implications for Lunar Development, 33
- The New Environment for Consolidation, 1514
- Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170
- Costs**
- Lane Rental—Innovative Way to Reduce Road Construction Time, 188
- Coupled systems**
- Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079
- Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080
- Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27
- Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121
- Upstream Boundary of Reservoir in Dynamic Analysis, 265
- Coupled walls**
- Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
- Covariance**
- Reliability-Based Approach to Linear Covariance Control Design, 229
- Coverings**
- Alternative Landfill Covers Pass the Test, 1496
- Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174
- Method to Estimate Water Storage Capacity of Capillary Barriers, 553
- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6
- Crack propagation**
- Crack Growth Analysis in Reinforced Concrete Using BEM, 322
- Fracture Behavior of Geosynthetic Interlayers in Road Pavements, 1255
- Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216
- Testing Concrete in Torsion: Instability Analysis and Experiments, 358
- Cracking**
- Analysis of Rotating Crack Model, 310
- Flexural Deformability of Reinforced Concrete Beams, 1139
- Infiltration Model for Furrow Irrigation, 860
- Influence of Service Cracking on Reinforcement Steel Corrosion, 952
- A New Method for Studying Stress-Induced Micro-cracks in Concrete, 968
- Rotating Crack Model with Transition to Scalar Damage, 242
- Shrinkage Cracking of Restrained Concrete Slabs, 301
- Structural Concrete: Cracked Membrane Model, 1178
- Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845
- Cracks**
- Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213
- Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226
- Application of Wavelet Theory for Crack Identification in Structures, 224
- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241
- Fuzzy Pattern Recognition Model for Diagnosing Cracks in RC Structures, 101
- Ice Thrust in Reservoirs, 89
- Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138
- Investigation of Joint Spalling on a Concrete Runway, 989

Cracks

- Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212
- Performance of Plain Concrete Runway Pavement, 1005
- Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010
- Sealant Degradation During Crack Sealing of Pavements, 983
- Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365
- Stress Intensity Factors and Displacements in Elastic Contact and Crack Problems, 327
- Stresses and Crack Angles in Concrete Membrane Elements, 1179

Cranes

- Crane Safety on Construction Sites, 1557

Creativity

- How Creative Engineers Think, 1430
- The Need to Learn and Why Engineers May Be Poor Students, 912
- A Stockholder's Story, 1425
- Techniques for Administrative Creativity in Local Government, 895

Creep

- Bounding Surface Models Applied to Fatigue of Plain Concrete, 276
- Bridge Prestress Losses in Dry Climate, 69
- Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328
- Experimental Study of Drained Creep Behavior of Sand, 318
- FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132
- Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83
- Four-Stage Model for Predicting Creep Behavior, 219
- General Creep-Time Equation, 966
- Losing Ground, 1443
- Should Grouted Anchors Have Short Tendon Bond Length?, 535
- Stress-Strain-Time Function of Clay, 552
- Triaxial Composite Model for Basic Creep of Concrete, 323

Critical path method

- Comparison of Delay Analysis Methodologies, 178
- Scheduling Projects with Repeating Activities, 172
- Simplified Simulation System for Construction Projects, 148

Crop production

- Irrigated Cropping Optimization, 859

Crop yield

- Nonlinear Programming Model for Extensive Irrigation, 867

Crops

- Irrigated Cropping Optimization, 859
- Nonlinear Programming Model for Extensive Irrigation, 867

1998 ASCE TRANSACTIONS

- Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865

Cross sections

- Behavior of Cross-Bracing in Latticed Towers, 1064
- Capacity of Thin-Walled I-Section Beam-Columns, 1063
- Head-Discharge Relationship in Flumes of Compound Sections, 874
- Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644

Crossflow

- Dilution of Circular Turbulent Nonbuoyant Surface Jets in Crossflows, 701
- Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782
- Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781

Culverts

- Drainage Culvert Installation by Jacking and Boring, 1398
- Generalized Culvert Design Diagram, 887
- Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537

Currents

- Numerical Simulation of Gravity Current Front, 714
- Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686
- Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421
- Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Curricula

- GIS Technology for Civil Engineering Education, 1016
- Kansas State University Architectural Engineering, 40
- Teaching Engineering Design with Practitioner Supervision: A Case Study, 1022

Curtain walls

- Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48
- Walls of Defense, 1437

Curvature

- Aspects of Stopping-Sight Distance on Crest Vertical Curves, 1239
- Design Considerations of Sight Distance Red Zones on Crest Curves, 1240
- Elastic Subsurface Stress Analysis for Circular Foundations. I, 274
- Elastic Subsurface Stress Analysis for Circular Foundations. II, 275
- Flexural Deformability of Reinforced Concrete Beams, 1139
- Framing a Work of Art, 1429
- In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308
- New Form of Road/Railway Transition Curves, 1264
- Revised Design Parameters for Vertical Curves, 1238
- Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166
- Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62
- Stress Distribution at PTFE Interface in Cylindrical Bearing, 77

SUBJECT INDEX

- Temperature and Curling Stress in Concrete Pavements: Analytical Solutions, 1205
- Three-Arc Vertical Curve for Constrained Highway Alignments, 1216
- Curve fitting**
- Four-Stage Model for Predicting Creep Behavior, 219
- Cyanides**
- Failure of Cyanide Overflow Pond Dam, 988
- Photochemical Destruction of Cyanide in Landfill Leachate, 507
- Cyclic loads**
- Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638
- Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561
- Comparison of Static and Dynamic Response of Timber Shear Walls, 1100
- Damping at Small Strains in Cyclic Simple Shear Test, 580
- Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240
- Effect of Helical Wrapping on Fatigue Resistance of GFRP, 128
- Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528
- Effects of Vibration History on Modulus and Damping of Dry Sand, 625
- Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120
- FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163
- FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145
- Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057
- Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357
- Model Prediction of Rutting in Asphalt Concrete, 1254
- Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316
- Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118
- Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76
- Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215
- Tensile Properties of Geogrids Under Cyclic Loadings, 597
- Cyclic tests**
- Cyclic Characterization of OII Landfill Solid Waste, 544
- Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
- Dynamic Properties of Sherman Island Peat, 524
- Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119
- Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120
- Shear Modulus and Damping Relationships for Gravels, 563
- Test of Welded Beam-to-Column Subassemblages. I: Global Behavior, 1157

Damage

- Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208
- Cylinders**
- Analytical Solutions for Diametral Point Load Strength Tests, 314
- Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352
- Ductility of Steel Short Cylinders in Compression and Bending, 227
- Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346
- Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696
- Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354
- Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872
- Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325
- Testing Concrete in Torsion: Instability Analysis and Experiments, 358
- Cylindrical shells**
- Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142
- Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357
- Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362
- Cylindrical tanks**
- Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030
- Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031
- Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225
- Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288
- Czech Republic**
- Czech It Out (Available only in Structural Engineering Special Issue), 1449
- Dam breaches**
- High-Resolution Finite-Volume Method for Shallow Water Flows, 718
- Dam construction**
- Inviting Trouble Downstream, 1417
- Dam failure**
- Failure of Cyanide Overflow Pond Dam, 988
- Dam safety**
- Over the Top Concrete, 1414
- Damage**
- Analysis of Rotating Crack Model, 310
- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Damage Identification Through Regularization Method I: Theory, 217
- Damage Identification Through Regularization Method II: Applications, 218
- Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118

Damage

- Endochronic Theory of Continuum Damage Mechanics, 230
- Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372
- Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316
- Plastic-Damage Model for Interfaces in Cementitious Materials, 302
- Rotating Crack Model with Transition to Scalar Damage, 242
- Simplified Model of Low Cycle Fatigue for RC Frames, 1143
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081
- Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208
- Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354
- Damage accumulation**
- Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328
- Progression and Variability of Damage on Rubble Mound Breakwaters, 1356
- Safety Estimation Method for Structures with Cumulative Damage, 351
- Damage assessment**
- Building Department's Response to EQ Damage to Steel Frame Buildings, 1011
- Damage Identification Through Regularization Method I: Theory, 217
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831
- The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003
- Seismic Damage Assessment of Steel Frames, 1084
- Seismic Performance Assessment of Water Delivery Systems, 841
- Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129
- Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- Structural Damage Detection Using Artificial Neural Networks, 838
- Damage prevention**
- New Type of Bottom Protection in Harbors—Design Method, 1347
- Damping**
- Analytical Expression for Tidal Damping in Alluvial Estuaries, 719
- Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331
- Bending Energy Dissipation of Simplified Single-Layer Stranded Cable, 306
- Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082
- Damping at Small Strains in Cyclic Simple Shear Test, 580
- Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225
- Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279

1998 ASCE TRANSACTIONS

- Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335
- In-Situ Determination of Soil Stiffness and Damping, 590
- Mechanical Properties of Low-Yield Point Steels, 970
- Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069
- Semiactive Control Algorithms for Structures with Variable Dampers, 326
- Shear Modulus and Damping Relationships for Gravels, 563
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081
- Two-Step Identification Approach for Damped Finite Element Models, 287
- Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78
- Viscous Heating of Fluid Dampers. I: Small-Amplitude Motions, 352
- Viscous Heating of Fluid Dampers. II: Large-Amplitude Motions, 353
- Damping ratio**
- Effects of Vibration History on Modulus and Damping of Dry Sand, 625
- Energy-Injecting Virtual Mass Resonant Column System, 566
- Identification of Dynamic Properties of Oil Landfill, 543
- Tensile Properties of Geogrids Under Cyclic Loadings, 597
- Dams**
- Inland Navigation: Locks, Dams, and Channels, 1578
- Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574
- Reliability Assessment of Pile-Supported Structural Systems, 1033
- Upstream Boundary of Reservoir in Dynamic Analysis, 265
- Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785
- When the Levee Inflates, 1411
- Dams, arch**
- Rapid Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999
- Rock Dam Revitalization, 1477
- Dams, concrete**
- Experimental Study of Small Scale Dam Models, 356
- Dams, earth**
- Extending the Period of Data Retrieval for Vertical Inclinometers, 569
- Failure of Cyanide Overflow Pond Dam, 988
- Interpreting Settlement Profiles of Earth Dams, 611
- Dams, gravity**
- Experimental Study of Small Scale Dam Models, 356
- Dams, rockfill**
- Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200
- Relationships for Non-Darcy Flow in Rockfill, 670
- Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671

SUBJECT INDEX

Deflection

Darcy's law

Two Applications of Flow in Porous Media with Threshold Gradient. 801

Data analysis

Data-Driven Analysis of "Corporate Risk" Using Historical Cost-Control Data. 144

Data collection

Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation. 1192

Monitoring Hydraulic Gradient Using Three-Point Estimator. 434

Multimedia for Construction Project Management: Project Navigator. 149

Numerical Gauge Approach to Water-Level Datum Determination. 685

Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames. 1009

Virtual Flight Data Recorder for Commercial Aircraft. 18

Data collection systems

Improving IDOT's Pavement Condition Rating Process. 836

Data communication

Freeway to the Future. 1464

Data handling

Defusing the Millennium Bomb. 1461

Data processing

Artificial Neural Networks for Civil Engineers: Advanced Features and Applications. 1546

Process Noise and Optimum Observation in Conditional Stochastic Fields. 366

Stochastic Modeling for Static GPS Baseline Data Processing. 1193

Data systems

Multimedia for Construction Project Management: Project Navigator. 149

Database management systems

Stochastic Approach to Delineating Wellhead Protection Areas. 1302

Dead loads

Stochastic Analysis of Load Combination. 320

Debris

Direct Determination of Rheological Characteristics of Debris Flow. 749

Decay

Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet. 767

Decision making

Artificial Neural Network Approach for Pavement Maintenance. 113

Balancing Corporate and Personal Values. 915

Competitive Bidding Strategy Model and Software System for Bid Preparation. 139

Decision Support System for Residential Land Development Site Selection Process. 52

Information Management in a Collaborative Multiactor Environment: The COMMIT Approach. 103

Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs? 1314

Quantification of Construction Clients' Needs Through Paired-Comparisons. 907

Risk-Based Decision Making in Water Resources VIII. 1591

Step by Step. 1490

Subcontractors' Bidding Decisions. 151

Decision support systems

Applications of Advanced Technologies in Transportation. 1545

Artificial Neural Network Approach for Pavement Maintenance. 113

Decision Support System for Conjunctive Stream-Aquifer Management. 1289

Decision Support System for Residential Land Development Site Selection Process. 52

Information Management in a Collaborative Multiactor Environment: The COMMIT Approach. 103

Modeling and Analysis of Aggregate Production Operations. 186

Simulating Highway Infrastructure Management Policies. 938

Verification and Validation of Case-Based Prequalification System. 109

Decks

Rapid Redecking. 1445

Decomposition

Decomposition of Specific Materials Buried within Sanitary Landfills. 518

Hydrogen Sulfide Production During Decomposition of Landfill Inputs. 414

Deep foundations

The Deep (Available in Geo-Environmental Special Issue only). 1517

Impulse Response Evaluation of Drilled Shafts. 615

Deep soil mixing

Deep Mixing Method: A Global Perspective. 1529

Soil Improvement for Big Digs. 1594

Tough Conditions. Innovative Solutions. 1438

Deep water

Dilution of Multiple Nonbuoyant Circular Jets in Crossflows. 381

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas. 290

Defects

Guided Waves in Multilayered Plates for Internal Defect Detection. 246

Significance of Defects in Annular Well Seals. 1368

Definitions

Refining the Definition of Field Capacity in the Literature. 880

Deflection

Analysis of Floating Roofs by ODE-Solver Method. 343

Back-Calculation of Concrete Pavement Modulus Using Road-Rater Data. 1210

Beam-Column Method for Tieback Walls. 530

Corrected Solution of Clamped Ring Plate with Edge Point Load. 292

Cyclic Elastoplastic Large Deflection Analysis of Thin Steel Plates. 252

Deflection of Steel-Concrete Composite Beams with Partial Shear Interaction. 1149

Deflection

- Deflections of Composite Beams with Web Openings, 1147
- Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299
- Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558
- Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211
- Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257
- Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206
- Impact of FWD Testing Variability on Pavement Evaluations, 1252
- Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577
- Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338
- Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203
- Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266
- Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
- Sleeve Cone-Cylinder Intersection Under Internal Pressure, 325

Deformation

- Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604
- Constitutive Modeling of Unsaturated Drying Deformable Materials, 289
- Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328
- Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339
- Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367
- Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142
- Extending the Period of Data Retrieval for Vertical Inclinometers, 569
- Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035
- Hyperbolic Cooling Towers with Bulge Imperfections, 359
- Interpreting Settlement Profiles of Earth Dams, 611
- Linear Representation of Steady-State Line for Sand, 640
- Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094
- Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234
- Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243
- Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Theoretical and Experimental Investigation of Helical Cardiac Leads, 214
- Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629

Deformation analysis

- Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240

1998 ASCE TRANSACTIONS

- Ductility of Steel Short Cylinders in Compression and Bending, 227
- Flexural Deformability of Reinforced Concrete Beams, 1139

Degradation

- Advanced Oxidation Processes for Degradation of 2,4-Dichloro- and 2,4-Dimethylphenol, 457
- Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118
- Decomposition of Specific Materials Buried within Sanitary Landfills, 518
- Decontamination of U-Rich Waters by Granular Iron, 377
- Effects of Moisture on Pyrolysis of Polypropylene, 482
- Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453
- Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094
- Photo-Initiated Degradation of Geotextiles, 633
- Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12
- Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316
- Sealant Degradation During Crack Sealing of Pavements, 983

Degrees of freedom

- New Seismic Testing Method. I: Fundamental Concepts, 277
- New Seismic Testing Method. II: Proof for MDOF Systems, 278
- Optimum Design of Absorber for MDOF Structures, 1161
- Residual Displacement Response Spectrum and Its Application, 1083
- Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345
- Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081
- Updating Models and Their Uncertainties. Part II: Model Identifiability, 264

Deicing

- Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375

Delaminating

- Buckling of Unilaterally Constrained Infinite Plates, 221
- Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
- Investigating Performance of Bonded Concrete Overlays, 996

Delay time

- Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222
- Comparison of Delay Analysis Methodologies, 178
- Determining Schedule Impact: Working Practice, 1404
- Factors of Non Excusable Delays That Influence Contractors' Performance, 923
- Integrated Control for Series of Waterway Locks, 1346
- Modified Delay Equations for Permitted Left Turns, 1241

SUBJECT INDEX

Design

Delivery

- Comparison of U.S. Project Delivery Systems, 190
- Design Guidelines for Design-Build Projects, 905
- Design-Build Alternative: A Contract Method, 944
- Design-Build Solutions, 948
- Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180
- Express Design, 1483
- Field-Level Management's Perspective of Design/Build, 1405
- From Product to Behavior, 942
- Model for Public Sector Design-Build Project Selection, 195
- Project Delivery and the U.S. Dept. of State, 947
- Realizing Engineer-Led Design/Build, 1444
- Risky Business, 943
- A Summary of Construction Congress V, 940
- A Tale of Two Bids, 1421
- Weighing the Options, 950

Deltas

- Estimation of Delta Profile in the Indravati Reservoir, 659
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592

Demand

- Probabilistic Model for Water Distribution Reliability, 1304
- Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Demolition

- Concrete Bridge Demolition Methods and Equipment, 70

Denitrification

- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402

Densification

- Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561

Density

- Effect of Variability on End Product Specifications, 156
- Identifying Component Variability of End Product Specification Tests, 155
- Modeling Density and Turbulence in Stratified Tidal Medium, 662
- Properties of Artificially Cemented Carbonate Sand, 572
- Speed-Flow Modeling of Arterial Roads in Singapore, 1223

Density currents

- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731

Density functions

- Depth Probability Distributions in Stream Reaches, 673
- Estimation of Conditional Non-Gaussian Translation Stochastic Fields, 261

Density stratification

- Eutrophication Model for a Coastal Bay in Hong Kong, 449

- Mixing Behavior of Density-Stratified Pools, 680

Deoxygenation

- Trends in BOD/DO Modeling for Wasteload Allocations, 495

Depth

- Burgers' Equation Model for Unsteady Flow in Open Channels, 705
- Depth Probability Distributions in Stream Reaches, 673
- End Depth in Circular Channels, 748
- Flow at a 90° Equal-Width Open-Channel Junction, 668
- Jet Scour in Equilibrium Phase, 697
- Prediction of Discontinuity in Stage-Discharge Rating Curves, 677
- Scale Effect in Pier-Scour Experiments, 723
- Subcritical Open-Channel Junction Flow, 747

Desalination

- Cost-Effectiveness Analyses of Libya's Water Supply System, 1316

Desiccation

- Constitutive Modeling of Unsaturated Drying Deformable Materials, 289
- Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499

Design

- Alternative Landfill Covers Pass the Test, 1496
- Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392
- Application of Equiredundancy Design to M-Estimation, 1188
- Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112
- Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203
- Combining Snow and Earthquake Loads for Limit States Design, 10
- Composite Girder Design of Cable-Stayed Bridges, 1401
- Construction Engineering Approach for Lunar Base Development, 34
- Continuum Topology Optimization for Concept Design of Frame Bracing Systems, 1085
- Czech It Out (Available only in Structural Engineering Special Issue), 1449
- Design and Construction of Earth Retaining Systems, 1558
- Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344
- Design and Simulation of Large Breakaway Signs, 1201
- Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Design Fee Versus Design Deficiency, 41
- Design Guidelines for Design-Build Projects, 905
- Design of Latticed Steel Transmission Structures, 1559
- Design of Lipped Channel Columns, 1040
- Design of Municipal Wastewater Treatment Plants, 1560
- Design of Wood Diaphragm with Openings, 1116
- Design-Build Alternative: A Contract Method, 944
- Design-Build Solutions, 948

Design

- Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168
- Domesticating Steel, 1408
- Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160
- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Field-Level Management's Perspective of Design/Build, 1405
- Generalized Culvert Design Diagram, 887
- Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573
- Hybrid Environment for Standards Processing, 107
- Information Model for Managing Design Changes in a Collaborative Environment, 98
- Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170
- I.T.S. On the Way, 1512
- Kansas State University Architectural Engineering, 40
- Lessons from an Outpatient Surgery Center, 46
- Liability in Designing for Construction Worker Safety, 50
- Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588
- Method for Railroad Track Foundation Design. I: Development, 555
- Method for Railroad Track Foundation Design. II: Applications, 556
- Model for Public Sector Design-Build Project Selection, 195
- Modeling Well Hydrodynamics, 783
- Multicriteria Optimization for Design of Structures with Active Control, 22
- New Form of Road/Railway Transition Curves, 1264
- New Type of Bottom Protection in Harbors—Design Method, 1347
- Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403
- Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201
- A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212
- Project-Based Course for Integration of Design and Construction at WPI, 1021
- Recent Approaches to Shear Design of Structural Concrete, 1172
- Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- Revised Design Parameters for Vertical Curves, 1238
- Risk-Cost Approach to Interim Drainage Structure Design, 1317
- River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328
- Seminar Review: Applying Technology in Project Management and Product Design, 935
- Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075
- Spatial Liquefaction Analysis System, 96
- Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879
- Specifications for Structural Steel Beams with Web Openings, 1597

1998 ASCE TRANSACTIONS

- Standards Modeling Language, 102
- Statewide Standardization of Site Improvement Standards, 1279
- Teaching Engineering Design with Practitioner Supervision: A Case Study, 1022
- Technology Readiness and Development Risks of New Supersonic Transport, 29
- Torsional Restraint Against Elastic Lateral Buckling, 1156
- Urban Subsurface Drainage, 1605
- Walls of Defense, 1437
- Who Pays for Defective Design?, 949
- Design criteria**
- Design Guide for Partially Restrained Composite Connections, 1144
- Light Rail as Planned, 1442
- New Model for Passing Sight Distance on Two-Lane Highways, 1263
- Reliability Assessment of High-Strength Concrete Columns, 273
- Design data**
- Design Gust Wind Speeds in the United States, 1048
- Entity-Based Models for Computer-Aided Design Systems, 94
- Information Model for Managing Design Changes in a Collaborative Environment, 98
- Design events**
- Entity-Based Models for Computer-Aided Design Systems, 94
- Design improvements**
- National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
- Design review**
- Assessment of Constructability Practices Among General Contractors, 51
- Design standards**
- Investigating the Adequacy of Vertical Design Loads for Shoring, 993
- Standards Modeling Language, 102
- Using Object-Communication for Design Standards Modeling, 105
- Design wind speed**
- Design Gust Wind Speeds in the United States, 1048
- Estimation of Long Return Period Design Values for Wind Speeds, 239
- Desorption**
- Laboratory Study of Soil Flushing by Aqueous Solutions, 617
- Detention basins**
- Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463
- Surface-Subsurface Model for Trench Infiltration Basins, 1311
- Deterioration**
- Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176
- Method for Estimating Transition Probability in Bridge Deterioration Models, 833
- Developing countries**
- Bidding Considerations in Developing Countries, 162

SUBJECT INDEX

Discharge

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Development

Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550

Economic and Technical Issues for Lunar Development, 31

Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023

The Need to Learn and Why Engineers May Be Poor Students, 912

Sustainable Development and the ASCE Code of Ethics, 1018

Diaphragm wall

Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594

Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627

Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599

Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585

Diaphragms

Design of Wood Diaphragm with Openings, 1116

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159

Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991

Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127

Laboratory Tests of Bolted Diaphragm-Girder Connections, 63

Differential equations

Analysis of Floating Roofs by ODE-Solver Method, 343

Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368

Solution of Beam on Elastic Foundation by DQEM, 373

Space-Time Conservation Method Applied to Saint Venant Equations, 704

Differential settlement

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Settlement Behavior of Posttensioned Slabs-on-Grade, 995

Diffraction

Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352

Supercritical Flow in Chute Contraction, 647

Diffusers

Hydraulics of "Duckbill" Elastomer Check Valves, 693

Diffusion

Analysis of Linear and Monoclinic River Wave Solutions, 734

Chloride Transport in Concrete Subjected to Electric Field, 979

Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696

Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492

Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700

Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774

Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344

Diffusion coefficient

Determination of Oxygen Diffusion Coefficient in Wastewaters, 405

Digesters

Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Digestion

Properties of Red Mud Tailings Produced under Varying Process Conditions, 404

Digital techniques

High-Tech Text, 1459

Identity Crisis, 1462

New Spin on Bid Sets, 1487

Digital terrain model

Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation, 1192

Dikes

Shear Stress around Vertical Wall Abutments, 744

Dilatancy

Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637

Dilution

Dilution of Circular Turbulent Nonbuoyant Surface Jets in Crossflows, 701

Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381

Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679

Initial Dilution Equations for Buoyancy-Dominated Jets in Current, 658

Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713

Dimensional analysis

Small-Scale Accelerated Pavement Testing, 1209

Dimensions

Calculating Average Filling Rock Diameter for Gabion-Mattress Channel Design, 760

Disasters

Floodplain Management, 1434

Discharge

Flood Peak Attenuation and Forecast, 793

Flow at a 90° Equal-Width Open-Channel Junction, 668

Flow Characteristics of Chimney Weir under Submergence, 863

Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782

Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781

Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711

Models of Storm Sewers Discharge: 1. Description, 445

Discharge

Models of Storm Sewers Discharge: 2. Calibration and Verification, 446

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

Prediction of Discontinuity in Stage-Discharge Rating Curves, 677

River Flood Flow and Its Energy Loss, 674

Theory of Pipe Drainage Assisted by Mole Drainage, 864

Discharge coefficients

Discharge Equation for Rectangular Slots, 759

Head-Discharge Relationship in Flumes of Compound Sections, 874

Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872

Discharge measurement

Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660

Discontinuities

Prediction of Discontinuity in Stage-Discharge Rating Curves, 677

Discrete elements

Analysis of Granular Bases Using Discrete Deformable Blocks, 1267

Determination of Bifurcation and Limit Points, 313

Discrimination

Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273

Disinfection

Modeling Water Treatment Chemical Disinfection Kinetics, 469

Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753

Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

UV Acceptance, 1433

Dispersion

Boundary Conditions for Modeling Transport in Vertical Barriers, 511

Contaminant Source Solutions with Scale-Dependent Dispersivities, 824

Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696

Hydraulic Estimation of Dispersion Coefficient for Streams, 684

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821

Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644

Longitudinal Dispersion on Ice-Covered Rivers, 90

Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817

Predicting Longitudinal Dispersion Coefficient in Natural Streams, 643

Spectral Modeling of Nonlinear Dispersive Waves, 641

Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

1998 ASCE TRANSACTIONS

Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Displacement

Design of Trusses under Uncertain Loads Using Convex Models, 1060

Detailing for Reinforcement Stability in RC Members, 1093

Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828

Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236

Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029

Residual Displacement Response Spectrum and Its Application, 1083

Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564

Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565

Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215

Stress Distribution at PTFE Interface in Cylindrical Bearing, 77

Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129

Transformation Matrices for Finite and Small Rotations, 251

Displacements

Blast Loads Versus Point Loads: The Missing Factor, 237

Displacement Estimates for Performance-Based Seismic Design, 1123

Earthquake-Induced Displacements of Solid-Waste Landfills, 548

Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333

Stress Intensity Factors and Displacements in Elastic Contact and Crack Problems, 327

Disposal

Disposal Costs for Environmentally Regulated Facilities: LCC Approach, 157

Marine Tailings Disposal Simulation, 691

Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416

Dispute resolution

Computer-Supported Collaborative Negotiation Methodology, 97

Construction Contract Claims, Changes & Dispute Resolution, 1554

Time-Lapse Video Applications for Construction Project Management, 164

Winning ADR Battles, 934

Dissipation

Short-Wave Behavior of Long-Wave Equations, 1350

Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345

Dissolved gases

Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

Nothing Wasted, 1465

Site Characterization and Containment Assessment with Dissolved Gases, 442

SUBJECT INDEX

Dissolved oxygen

- Aeration Performance of Triangular Plan-Form Labyrinth Weirs, 460
- Determination of Oxygen Diffusion Coefficient in Wastewaters, 405
- Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400
- In-Stream Hollow-Fiber Membrane Aeration, 715
- Trends in BOD/DO Modeling for Wasteload Allocations, 495

Dissolved solids

- Influence of Carbonation on Leaching of Cementitious Wasteforms, 426
- Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385

Distance measuring

- Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221

Distortion

- Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
- Misplacement of Launching Bearings in PC Launched Bridges, 75

Distribution

- Interference Assemblies, 209
- Multivariate Modeling of Flood Flows, 663

Diversification

- The Need to Learn and Why Engineers May Be Poor Students, 912

Diversion

- Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654
- Numerical Flow Model for Fish Diversion Studies at Wanapum Dam, 784

Documentation

- Identity Crisis, 1462
- Time-Lapse Video Applications for Construction Project Management, 164
- Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Domes, structural

- Baseball Caps, 1533
- Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101

Doppler systems

- ADV Measurements of Turbulence: Can We improve Their Interpretation?, 721
- Characteristics of Shallow Rain-Impacted Flow over Smooth Bed, 788
- Mean-Field Rainfall Bias Studies for WSR-88D, 809
- Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 886

Douglas fir

- Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965

Drag

- Resistance and Drag Reduction of Flows of Clay Suspensions, 645
- Simulation of Ringing in Offshore Systems under Viscous Loads, 280

Droughts

Drainage

- Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886
- Drainage Culvert Installation by Jacking and Boring, 1398
- Filteration and Drainage in Geotechnical/ Geoenvironmental Engineering, 1566
- Open-Graded Highway Bases Make Permeameter Setup Important, 1213
- Refining the Definition of Field Capacity in the Literature, 880
- Risk-Cost Approach to Interim Drainage Structure Design, 1317
- Water Resources Engineering '98, 1609
- Water Resources in Egypt: Strategies for Next Century, 1315

Drainage basins

- Wetland Wonder, 1535

Drains

- Theory of Pipe Drainage Assisted by Mole Drainage, 864

Drawdown

- A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827

Dredge spoil

- Bottoms Up, 1534
- Case Study of Slope Failures at Spilmans Island, 626

Dredging

- Interest in Deposits (available only in Geoenvironmental Special Issue), 1426

Drift

- Drift Velocity Concept for Sediment-Laden Flows, 765
- Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48

Drilled shafts

- Below Boston's New Bridge, 1528
- End Bearing Capacity of Drilled Shafts in Rock, 579
- Impulse Response Evaluation of Drilled Shafts, 615
- Side Shear Induced in Drilled Shaft by Suction Change, 596

Driven piles

- General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635
- Lateral Load Behavior of Full-Scale Pile Group in Clay, 570

Driver behavior

- Ordered Probability Modeling of Seat Belt Usage, 1232

Driver licenses

- Michigan's Commercial Driver's License (CDL) Experience, 1217

Driver tests

- Michigan's Commercial Driver's License (CDL) Experience, 1217

Droughts

- Drought Contingency Planning: Evaluating the Effectiveness of Plans, 1307
- Susceptibility of Water Supply Reservoirs to Drought Conditions, 808

Water-Resources Optimization Model for Santa Barbara, California, 1308

Ductility

Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137

Cyclic Test of Four-Story Steel Plate Shear Wall, 1037

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160

Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240

Ductility of Steel Short Cylinders in Compression and Bending, 227

Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124

FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145

Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094

New Ductile Hybrid FRP Reinforced Bar for Concrete Structures, 117

Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123

Proportioning: Missing Step in Model Building Code Seismic Design, 1388

Reliability Assessment of Pile-Supported Structural Systems, 1033

Seismic Performance of Confined Sill Plate Connections, 3

Test of Welded Beam-to-Column Subassemblies. I: Global Behavior, 1157

Tests of Welded Beam-to-Column Subassemblies. II: Detailed Behavior, 1158

Ducts

Boundary Shear in Rectangular Ducts and Channels, 652

Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654

The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Durability

Antioxidant Depletion Lifetime in High Density Polyethylene Geomembranes, 576

Comparative Study of Durability Indices for Clay Bricks, 39

Development of New Durability Index for Clay Bricks, 47

Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55

Framework for Modeling Durability Cost of Structural Systems, 842

Photo-Initiated Degradation of Geotextiles, 633

State of Restored Practice Review in FRP Composite Piling, 127

Surface-Treated Slag Concrete: Assessing Performance Under Cyclic Wetting, 977

Dust

Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974

Dyes

Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406

Dynamic analysis

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222

Compatibility and Rheological Study of ASR Asphalt Binder, 956

Dynamic Analysis of Existing Continuous Bridge, 60

Dynamic Properties of Solid Waste Based on Back-Analysis of Oil Landfill, 545

Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285

In-Situ Determination of Soil Stiffness and Damping, 590

Period Formulas for Concrete Shear Wall Buildings, 1071

Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032

Upstream Boundary of Reservoir in Dynamic Analysis, 265

Dynamic characteristics

Adaptive H_∞ Filter: Its Application to Structural Identification, 355

Dynamic loads

Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055

Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835

Pavement Strain from Moving Dynamic 3D Load Distribution, 1265

Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Test of Welded Beam-to-Column Subassemblies. I: Global Behavior, 1157

Tests of Welded Beam-to-Column Subassemblies. II: Detailed Behavior, 1158

Dynamic models

Discrete-Time Dynamic User-Optimal Departure Time/Route Choice Model, 1228

Simulation Modeling and Management of a Large Basement Construction Project, 100

Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484

Dynamic pressure

Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030

Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031

Evaluation of Fluctuating Pressures Measured with Connection Tubes, 695

Dynamic programming

Optimal Operation of South Indian Irrigation Systems, 1309

Optimization Modeling for Sewer Network Management, 187

Dynamic properties

Cyclic Characterization of Oil Landfill Solid Waste, 544

Dynamic Properties of Sherman Island Peat, 524

Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621

SUBJECT INDEX

Earthquake engineering

Dynamic response

- Active Control of Transmission Tower under Stochastic Wind, 1164
- Analysis and Experiments on Stress Waves in Planar Trusses, 315
- Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621
- Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298
- Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030
- Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031
- Evaluation of Fluctuating Pressures Measured with Connection Tubes, 695
- Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121
- Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992
- Identification of Dynamic Properties of Oil Landfill, 543
- Moving Loads on a Plate on Elastic Foundation, 329
- A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632
- Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207
- Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215
- Time-Domain Analysis of Flexible Foundations Using Lanczos Vectors, 602
- Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263

Dynamic stability

- Dynamic Instability of Tires Under Asymmetric Loads, 20

Dynamic tests

- Comparison of Static and Dynamic Response of Timber Shear Walls, 1100
- Damage Identification Through Regularization Method II: Applications, 218
- Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
- Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
- Effects of Vibration History on Modulus and Damping of Dry Sand, 625
- Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126

Dynamics

- Analysis of Linear and Monoclonal River Wave Solutions, 734
- Application of Wavelet Theory for Crack Identification in Structures, 224
- Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267
- Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241
- Dynamic Instability of Laminates Subjected to Temperature Field, 347

- Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288
- Dynamics of Rigid Block Due to Horizontal Ground Motion, 294
- Dynamics of Temperature Stratification in Lowland Rivers, 770
- Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224
- Gravitational Fall Velocity of Sphere in Viscous Fluid, 350
- Influence of Canal Geometry and Dynamics on Controllability, 852
- Introduction of Smith Predictor into Dynamic Regulation, 856
- Lagrangian/Eulerian Description of Dynamic System, 317
- New Form of Road/Railway Transition Curves, 1264
- Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582
- Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173
- Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334
- Earth pressure**
 - Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561
 - Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533
 - Observed Performance of Multipropped Excavation in Stiff Clay, 608
- Earth reinforcement**
 - Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
 - Performance of Geosynthetic Reinforced Slopes at Failure, 587

Earth structures

- Evaluation of the Tensar ARES™ Retaining Wall System, 1565

Earthquake damage

- Bayesian Updating of Fragilities with Application to RC Frames, 1125
- Building Department's Response to EQ Damage to Steel Frame Buildings, 1011
- Cementing the Future, 1531
- Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124
- Guide to Post-Earthquake Investigation of Lifelines, 1572
- Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010
- Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013
- Residual Displacement Response Spectrum and Its Application, 1083
- Seismic Damage Assessment of Steel Frames, 1084
- Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames, 1009
- Summary of SAC Case Study Building Analyses, 1012

Earthquake engineering

- Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
- Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159

Earthquake engineering

- Geotechnical Earthquake Engineering and Soil Dynamics III, 1570
Light Rail as Planned, 1442
New Seismic Testing Method. I: Fundamental Concepts, 277
New Seismic Testing Method. II: Proof for MDOF Systems, 278
Preparing for Pier A, 1482
Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311
Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
Seismic Guidelines for Ports, 1593
Simplified Frequency Content Estimates of Earthquake Ground Motions, 539

Earthquake excitation

- Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637
Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291
Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
Cyclic Characterization of Oil Landfill Solid Waste, 544
Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304
Earthquake-Induced Displacements of Solid-Waste Landfills, 548
Effects of Spatially Varying Ground Motions on Short Bridges, 1128
Foundation Liquefaction Countermeasures for Earth Embankments, 573
Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335
Optimum Design of Absorber for MDOF Structures, 1161
A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632
Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311
Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166
Synthesizing Ensembles of Spatially Correlated Accelerograms, 349

Earthquake loads

- Combining Snow and Earthquake Loads for Limit States Design, 10
Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
Experimental Study of Small Scale Dam Models, 356
Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118

Earthquake resistant structures

- Making Way for Water, 1467
National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
Proportioning: Missing Step in Model Building Code Seismic Design, 1388
Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126
Seismic Guidelines for Ports, 1593
Seismic Retrofit Program for Los Angeles Bridges, 849
Solid Footing (available in Geoenvironmental Special Issue only), 1469

1998 ASCE TRANSACTIONS

- Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280

Earthquakes

- Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014
Assessment of Liquefaction Potential Using Optimum Seeking Method, 593
Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291
Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
Ductility of Steel Short Cylinders in Compression and Bending, 227
Dynamic Properties of Solid Waste Based on Back-Analysis of Oil Landfill, 545
Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030
Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031
Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225
Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077
Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124
Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534
Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992
Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
Ground Settlement in Simi Valley following the Northridge Earthquake, 531
Guide to Post-Earthquake Investigation of Lifelines, 1572
Identification of Dynamic Properties of Oil Landfill, 543
Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372
National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001
Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57
Period Formulas for Concrete Shear Wall Buildings, 1071
A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632
Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560
Residual Displacement Response Spectrum and Its Application, 1083
Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619
Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48
Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564
Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565
Simplified Frequency Content Estimates of Earthquake Ground Motions, 539
- ### Earthwork
- Open-Graded Highway Bases Make Permeameter Setup Important, 1213

SUBJECT INDEX

Elastic moduli

Settlement Behavior of Posttensioned Slabs-on-Grade, 995

Eccentric loading

Elastic Subsurface Stress Analysis for Circular Foundations. I, 274

Elastic Subsurface Stress Analysis for Circular Foundations. II, 275

Eccentric loads

Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051

Economic analysis

Cost-Effectiveness Analyses of Libya's Water Supply System, 1316

Economic Evaluation of Design Codes—Case of Seismic Design, 11

Lunar Polar Ice: Implications for Lunar Development, 33

Seismic Retrofit Program for Los Angeles Bridges, 849

Economic development

Competitive Tendering Practice in Chinese Construction, 158

Economic factors

Input-Output Economic Evaluation of System of Levees, 1306

Economics

Economic and Technical Issues for Lunar Development, 31

Input-Output Economic Evaluation of System of Levees, 1306

Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843

Ecosystems

Cost Effectiveness and Incremental Cost Analyses: Alternative to Benefit-Cost Analysis for Environmental Remediation Projects, 1362

Engineering Approaches to Ecosystem Restoration, 1562

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Eddies

Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Eddy viscosity

Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355

Education-practice interchange

Teaching Engineering Design with Practitioner Supervision: A Case Study, 1022

Effective length

Design of Lipped Channel Columns, 1040

Tests of Fixed-Ended Plain Channel Columns, 1039

Effective stress

Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532

Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489

Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554

Mechanics of Granular Materials at Low Effective Stresses, 25

Effective width

Cold-Formed Steel Members with Multiple Longitudinal Intermediate Stiffeners, 1151

Composite Girder Design of Cable-Stayed Bridges, 1401

Efficiency

Does Filtration Efficiency Affect Measurements of Particle Chemical Composition?, 454

Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463

Seminar Review: Applying Technology in Project Management and Product Design, 935

Effluents

Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390

Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660

Egypt

Cost Allocation for Multiuse Water Systems in Egypt, 876

Water Resources in Egypt: Strategies for Next Century, 1315

Eigenvalues

Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279

Eigenvectors

Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279

Elastic analysis

Elastic Analysis of Buried Pipes under Surface Patch Loadings, 591

Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155

Elastic foundations

Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200

Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338

Moving Loads on a Plate on Elastic Foundation, 329

Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266

Solution of Beam on Elastic Foundation by DQEM, 373

Elastic media

Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241

Elastic moduli

Bayesian Prediction of Elastic Modulus of Concrete, 1034

Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211

Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206

Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203

Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254

Ultrasonic Techniques to Characterize Pultruded Composite Members, 129

Elasticity

- Analytical Solutions for Diametral Point Load Strength Tests, 314
- Corrected Solution of Clamped Ring Plate with Edge Point Load, 292
- Elastic Subsurface Stress Analysis for Circular Foundations. I, 274
- Elastic Subsurface Stress Analysis for Circular Foundations. II, 275
- Experimental Determination of Frequencies and Tension for Elastic Cables, 336
- Layerwise Composite Plate Analysis Using an Element Template Methodology, 281
- Solitary Waves in Flexible, Arbitrary Elastic Helix, 324
- Solutions of Multilayer Inclusion Problems Under Uniform Field, 231
- Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Torsional Restraint Against Elastic Lateral Buckling, 1156

Elastomer

- Behavior of Elastomeric Bridge Bearings: Computational Results, 73
- Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284
- Hydraulics of "Duckbill" Elastomer Check Valves, 693
- Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333
- Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236

Elastoplasticity

- Cyclic Elastoplastic Large Deflection Analysis of Thin Steel Plates, 252
- Determination of Bifurcation and Limit Points, 313
- Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081

Electrical conductivity

- Fractal Model for Flow Through Saturated Soils, 529

Electrical equipment

- Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403
- Optically Powered Electrical Accelerometer and Its Field Testing, 271

Electrokinetics

- Chloride Transport in Concrete Subjected to Electric Field, 979
- Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514
- Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557
- Pullout Resistance of High-Voltage Strengthened Ground Anchors, 603
- Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

Electrolysis

- In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481

Electroosmosis

- Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998

Elevation

- Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894
- Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

Elevators

- Numerical Studies on Recent Large High-Rise Buildings Fire, 44

Embankments

- Foundation Liquefaction Countermeasures for Earth Embankments, 573
- Hydraulics of Embankment Weirs, 758
- Riprap Sizing at Toe of Embankment Slopes, 727
- Settlement of Embankments on Soft Clays, 551
- Settlement of Embankments on Soft Clays, 586
- Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629

Embedded foundations

- Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Time-Domain Analysis of Flexible Foundations Using Lanczos Vectors, 602

Embedment

- Overlooked Assumption in Nonconstrained Post Embedment, 1387
- Strength and Deformability of Wood beneath Bolted Connectors, 1046

Emission standards

- Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272

Emissions

- Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272
- Technology Readiness and Development Risks of New Supersonic Transport, 29
- Transportation Planning and Air Quality III: Emerging Strategies and Working Solutions, 1603

Empirical equations

- Analysis of Recreation Equations Using Mean Multiplicative Error, 386
- Boundary Shear in Rectangular Ducts and Channels, 652
- Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609
- Initial Dilution Equations for Buoyancy-Dominated Jets in Current, 658
- Limitations and Proper Use of the Hazen-Williams Equation, 756

Employee benefits

- Resources for Ongoing Professional Development, 911

Employees

- Career Fitness, 909
- Field-Level Management's Perspective of Design/Build, 1405
- Optimization of Crew Configurations Using Activity-Based Costing, 159
- Trip Linkage Patterns for Workers, 1231

Employment

- New Methodology for Calibrating the Lowry Model, 1276

SUBJECT INDEX

Employment opportunities

Out of Sight, Out of Time, 1431

Encasements

Durability Characteristics of Concrete Columns
Wrapped with Fiber Tow Sheets, 958

Energy

Calculation of Elastodynamic Energy Parameter for
Plane Crack Prior to Kinking, 241

Energy-Injecting Virtual Mass Resonant Column Sys-
tem, 566

Engelund's Analysis of Turbulent Energy and Sus-
pended Load, 268

Measuring Droplet Impact Energy with Piezoelectric
Film, 878

Plastic-Damage Model for Cyclic Loading of Concrete
Structures, 316

Energy absorption

Behavior and Ductility of Simple and Continuous FRP
Reinforced Beams, 137

Energy conservation

Improved Operation of Water Distribution Systems
Using Variable-Speed Pumps, 202

Integrated Energy and Water Conservation Modeling,
199

Energy consumption

Integrated Energy and Water Conservation Modeling,
199

Energy conversion

Performance Prediction of Contrarotating Wells Tur-
bine for Wave Energy Converter Design, 201

Energy dissipaters

Seismic Strengthening of Liquid-Storage Tanks with
Energy-Dissipating Anchors, 1069

Energy dissipation

Bending Energy Dissipation of Simplified Single-Layer
Stranded Cable, 306

Characteristics of Undular Hydraulic Jumps: Experi-
ments and Analysis, 669

Comparative Study of Frames using Viscoelastic and
Viscous Dampers, 1082

Design of Small, Hard-Shell Overflow Dams on Com-
pressible Foundations, 200

Double-Leaf Gate for Energy Dissipation below Regu-
lators, 778

Effects of Sediment Transport on Bed Friction and Tur-
bulence, 1343

FRC-Encased Steel Joist Composite Beams Under
Reversed Cyclic Loading, 1145

River Flood Flow and Its Energy Loss, 674

Semiactive Control Algorithms for Structures with
Variable Dampers, 326

Spatial B-Jump at Sudden Channel Enlargements with
Abrupt Drop, 724

Viscous Heating of Fluid Dampers. I: Small-Amplitude
Motions, 352

Viscous Heating of Fluid Dampers. II: Large-
Amplitude Motions, 353

Wave Interactions with Vertical Slotted Barrier, 1337

Energy losses

River Flood Flow and Its Energy Loss, 674

Subcritical Open-Channel Junction Flow, 747

Energy methods

Effects of Vibration History on Modulus and Damping
of Dry Sand, 625

An Energy Approach to Rock Slope Stability Analysis,
256

Energy Estimates for Discretization Errors in Water
Hammer Problems, 692

Reliability of Energy Method to Predict Lift Slab
Structures Stability, 1006

Energy storage

Energy-Storing Wallboard: Flammability Tests, 963

Energy transfer

Comment on the Overall Thermal Transfer Value
(OTTV) for Building Energy Control, 56

Engineering

Developing Standards and International Standards
Organizations, 932

Engineering History and Heritage, 1563

Geophysical Exploration for Engineering and Environ-
mental Investigations, 156^c

Engineering education

Building Knowledge (Available only in Structural
Engineering Special Issue), 1448

Civil Engineering Education Through Case Studies of
Failures, 994

The Civil Engineering Resource Library, 108

GIS Technology for Civil Engineering Education, 1016

Project-Based Course for Integration of Design and
Construction at WPI, 1021

Teaching Engineering Design with Practitioner Super-
vision: A Case Study, 1022

Tomorrow's Civil Systems Engineer—The Master
Integrator, 1017

Toward the Environment and Sustainability Ethic in
Engineering Education and Practice, 1020

Engineering firms

Aspiring to and Preparing for Engineering Firm Own-
ership, 913

Corporate University: Consulting Firm Case Study,
917

Making the Transition from Engineer to Entrepreneur,
914

Managing Innovation Information in Engineering and
Construction Firms, 903

A Merger Manual, 1424

The Need to Learn and Why Engineers May Be Poor
Students, 912

Obstacles and Opportunities in International Engineer-
ing Services, 936

Small Firms, Big Advantages, 1515

A Stockholder's Story, 1425

Total Quality Management Implementations and
Results: Progress Update, 1389

Engineering profession

Freeway to the Future, 1464

Engineers

The Case for a Technology Management Institute, 897

Engineers' Role in Sustainable Development: Consid-
ering Cultural Dynamics, 1023

Executive Fellowship Program: Lessons for Engineers,
918

How Creative Engineers Think, 1430

Engineers

Engineers

- Realizing Engineer-Led Design/Build, 1444
- Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447
- Site Safety: Rights, Risks, and Responsibilities, 1455
- Speak Out: The Engineer as Communicator, 908
- Time Management for Engineers and Constructors, 1600
- Tomorrow's Civil Systems Engineer—The Master Integrator, 1017
- Entrainment**
- Erosion of Fluid Mud Layers. I: Entrainment Model, 8
- Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7
- Methodology for Predicting Cooling Water Effects on Fish, 447
- Entrepreneurship**
- Making the Transition from Engineer to Entrepreneur, 914
- Entropy**
- Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771
- Envelope**
- Comment on the Overall Thermal Transfer Value (OTTV) for Building Energy Control, 56
- Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55
- Priorities in Building Envelope Design, 42
- Environment**
- Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191
- Automatic Savings, 1463
- Environmental audits**
- VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367
- Environmental effects**
- Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840
- Environmental engineering**
- Rock Dam Revitalization, 1477
- Environmental factors**
- Bottoms Up, 1534
- Coordination: Water Resources and Environment, 1556
- Interactions Between Construction Planning and Influence Factors, 169
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592
- Environmental impacts**
- Environmental Exposure, 1497
- Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300
- Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781
- Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840
- Environmental issues**
- Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550
- Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203

1998 ASCE TRANSACTIONS

- Contaminated Soil Management at Construction Sites, 1376
- Coordination: Water Resources and Environment, 1556
- Disposal Costs for Environmentally Regulated Facilities: LCC Approach, 157
- Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023
- Equitable Traffic Assignment with Environmental Cost Functions, 1196
- Management of Discarded Pharmaceuticals, 1372
- Out of Sight, Out of Time, 1431
- Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585
- Sustainable Development and the ASCE Code of Ethics, 1018
- Toward the Environment and Sustainability Ethic in Engineering Education and Practice, 1020
- Water Resources: A New Era for Coordination, 1606
- Environmental planning**
- Sustainability Criteria for Water Resource Systems, 1599
- Environmental Protection Agency**
- HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379
- Environmental quality**
- Cost Effectiveness and Incremental Cost Analyses: Alternative to Benefit-Cost Analysis for Environmental Remediation Projects, 1362
- Geophysical Exploration for Engineering and Environmental Investigations, 1568
- Performance Comparison for Thermal Comfort Sensors, 49
- Sampling Method for Cost Estimation of Highway Noise Barrier Infrastructure, 848
- Toward the Environment and Sustainability Ethic in Engineering Education and Practice, 1020
- Environmental quality regulations**
- Out of Sight, Out of Time, 1431
- Use of Neural Networks in Design of Coastal Sewage Systems, 699
- Environmental surveys**
- Matrix Approach to Contaminant Transport Potential, 1377
- Enzymes**
- Comparative Kinetics of Bacterial Reduction of Chromium, 424
- Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470
- Epoxy adhesives**
- Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
- Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124
- Epoxy coatings**
- Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64
- Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65
- Smokestack Rescue, 1457
- Epoxy resins**
- Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473

SUBJECT INDEX

Ethics

Equations of motion

- Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355
- Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079
- Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080
- Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616

Equilibrium

- Jet Scour in Equilibrium Phase, 697
- Overall Adsorption Isotherm of Natural Organic Matter, 506

Equilibrium profile

- Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339

Equipment

- Apparatus for Streaming Potential Measurements on Granular Filter Media, 522
- Concrete Bridge Demolition Methods and Equipment, 70
- Fluidic Device for Surge Flow Irrigation, 885

Eritrea

- Stream Gauging of Torrential Rivers of Eastern Eritrea, 816

Erosion

- Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766
- Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861
- Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790
- Erosion of Fluid Mud Layers. I: Entrainment Model, 8
- Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7
- Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772
- Failure of Cyanide Overflow Pond Dam, 988
- Getting the GIST of Costs, 1478
- Matrix Approach to Contaminant Transport Potential, 1377
- A Mechanism for the Formation of Lutoclines by Waves, 1340
- Salvaging Streams, 1475

Erosion control

- Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200
- Experimental Investigation of Flow Past Submerged Vanes, 709
- Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569
- Interest in Deposits (available only in Geoenvironmental Special Issue), 1426

Error analysis

- Corrected Solution of Clamped Ring Plate with Edge Point Load, 292
- Design Fee Versus Design Deficiency, 41
- Energy Estimates for Discretization Errors in Water Hammer Problems, 692
- Error Analysis of Flow Meter Measurements, 883
- Mean-Field Rainfall Bias Studies for WSR-88D, 809

- Performance Comparison of Overland Flow Algorithms, 688

Errors

- Design Fee Versus Design Deficiency, 41
- GIS Errors and Surface Hydrologic Modeling: An Examination of Effects and Solutions, 1190
- GLONASS Satellite Surveying, 1187
- Who Pays for Defective Design?, 949

Esthetics

- Sky High, 1513

Estimates

- Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508

Estimating

- Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812
- Kriging of Lognormal Stochastic Field, 348

Estimation

- Analysis of Reaeration Equations Using Mean Multiplicative Error, 386
- Application of Equiredundancy Design to M-Estimation, 1188
- Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420
- Converting from Pan Evaporation to Evapotranspiration, 888
- Determination of Oxygen Diffusion Coefficient in Wastewaters, 405
- Displacement Estimates for Performance-Based Seismic Design, 1123
- Effect of Trimming on LP III Flood Quantile Estimates, 795
- Estimation of Biokinetic Parameters for Unsaturated Soils, 490
- Estimation of Conditional Non-Gaussian Translation Stochastic Fields, 261
- Genetic Algorithms for Calibrating Water Quality Models, 398
- Hydraulic Estimation of Dispersion Coefficient for Streams, 684
- Monitoring Hydraulic Gradient Using Three-Point Estimator, 434
- Safety Estimation Method for Structures with Cumulative Damage, 351
- Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221
- Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- Theoretical Justification of SCS Method for Runoff Estimation, 892

Estuaries

- Analytical Expression for Tidal Damping in Alluvial Estuaries, 719
- Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420
- Determination of Velocity in Estuary for Bridge Scour Computations, 720
- Estuarine and Coastal Modeling, 1564
- Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660

Ethics

- Balancing Corporate and Personal Values, 915

Ethics

- Ethics: A Professional Concern, 4
- Standing Firm: When Ethics are Challenged, 5
- Sustainable Development and the ASCE Code of Ethics, 1018

Europe

- Toward Improved Highway Quality: Lessons from Western Europe, 906

Eutrophication

- Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420
- Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284
- Eutrophication Model for a Coastal Bay in Hong Kong, 449

Evaluation

- Evaluation of the Tensar ARES™ Retaining Wall System, 1565
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831
- Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805

Evaporation

- Air Flow as Monitoring Technique for Landfill Liners, 437
- Converting from Pan Evaporation to Evapotranspiration, 888
- Full-Scale Leachate Treatment Using New Evaporation Technology, 1371

Evapotranspiration

- Converting from Pan Evaporation to Evapotranspiration, 888
- Evapotranspiration of Melaleuca Forest in South Florida, 807
- Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865

Evidence

- Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Evolutionary computation

- Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Evolution of Optimum Shapes Using Genetic Algorithm, 1167
- Evolutionary Algorithm for Minimization of Pumping Cost, 111
- Genetic Algorithms for Calibrating Water Quality Models, 398
- Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
- New Methodology for Calibrating the Lowry Model, 1276
- Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086
- Site-Level Facilities Layout Using Genetic Algorithms, 110
- Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Excavation

- Averting Excavation Disaster, 898
- Base Stability of Deep Excavation in Anisotropic Soft Clay, 600
- Big Digs Around the World, 1548

1998 ASCE TRANSACTIONS

- Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558
- Observed Performance of Multipropped Excavation in Stiff Clay, 608

- Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599

- Smooth Surface Approximation for Computing Pit Excavation Volume, 1189

- Soil Improvement for Big Digs, 1594

- Stress-Strain-Time Function of Clay, 552

Excitation

- Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206
- Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257
- LQG/LTR Control Methodology in Active Structural Control, 262
- Reliability-Based Approach to Linear Covariance Control Design, 229
- Spectral Identification of Nonlinear Structural Systems, 296

Expansion

- Stretching a Landfill, 1486

Expansion joints

- Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304

Expansive soils

- Side Shear Induced in Drilled Shaft by Suction Change, 596

Experimental data

- Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293

Experimentation

- Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360
- Latticed Mast Structures, 1047
- A New Method for Studying Stress-Induced Microcracks in Concrete, 968
- Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872
- Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Expert systems

- Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
- Fuzzy Pattern Recognition Model for Diagnosing Cracks in RC Structures, 101
- Standards Modeling Language, 102

Explosion effects

- Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221

Explosions

- Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221

Explosives

- Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453

Extraction procedures

- Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432

SUBJECT INDEX

Fatigue

Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998

Dealing with DNAPLs, 1521

Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450

Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492

Influence of Water Content on SVE in a Silt Loam Soil, 500

Laboratory Study of Soil Flushing by Aqueous Solutions, 617

Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287

Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797

VOC Vapor Sorption in Soil: Soil Type Dependent Model and Implications for Vapor Extraction, 391

Extraterrestrial bases

Active Control of Tensegrity Systems, 21

Construction Engineering Approach for Lunar Base Development, 34

Role of Launch Vehicles in Moon-Mars Exploration Program, 32

Fabrication

Modeling Helps in Understanding Policy Alternatives: A Case, 901

Fabrics

Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024

Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125

Facilities

Benchmarking for Design of Major Airports Worldwide, 1246

Coldhearted Building, 1500

Disposal Costs for Environmentally Regulated Facilities: LCC Approach, 157

Site-Level Facilities Layout Using Genetic Algorithms, 110

A Tale of Two Bids, 1421

Failure load

Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133

Strength of Slender Reinforced Concrete Columns, 1133

Strength of Webs Subjected to Compressive Edge Loading, 9

Failure modes

Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131

A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632

Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013

System Reliability Evaluation of Ductile Frame Structures, 1099

Failure surface

Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550

Failures

Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984

Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049

Business Failures: Liabilities of Newness, Adolescence, and Smallness, 193

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

Ductility of Steel Short Cylinders in Compression and Bending, 227

Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176

FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132

Investigation into Cause of Failure of 22 kV PILC Cable, 1007

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Method for Railroad Track Foundation Design. II: Applications, 556

Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Performance of Three-Dimensional Slope Stability Methods in Practice, 623

Rapid Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999

Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564

Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565

Failures, investigations

Civil Engineering Education Through Case Studies of Failures, 994

Guide to Post-Earthquake Investigation of Lifelines, 1572

The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003

Performance of Plain Concrete Runway Pavement, 1005

Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447

Falling bodies

Gravitational Fall Velocity of Sphere in Viscous Fluid, 350

Fast track construction

Coldhearted Building, 1500

Project Delivery and the U.S. Dept. of State, 947

Fasteners

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Fatalities

Motor Vehicle Death Reductions from Guardrail Installation, 1259

Fatigue

Axial Fatigue Performance of Cold-Formed Steel Sections, 1041

Bounding Surface Models Applied to Fatigue of Plain Concrete, 276

Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328

Fatigue

- Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120
- Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068
- Fatigue Response of Concrete Decks Reinforced with FRP Rebars, 1025
- Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991
- Laboratory Tests of Bolted Diaphragm-Girder Connections, 63
- Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1
- Simplified Model of Low Cycle Fatigue for RC Frames, 1143
- Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066

Fatigue life

- Bridge Fatigue Life Estimation From Field Data, 1399
- Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234

- Fatigue Strength of Riveted Connections, 1111
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831

Fatigue strength

- Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

- Fatigue Strength of Riveted Connections, 1111

Fatigue tests

- Effect of Helical Wrapping on Fatigue Resistance of GFRP, 128
- Mechanical Properties of Low-Yield Point Steels, 970

Federal government

- Federal Triangle Finale, 1451

Federal role

- TEA-21: Something for Everyone, 1507

Feedback control

- Active Control of Transmission Tower under Stochastic Wind, 1164
- Test Cases for Canal Control Algorithms, 853

Fees

- Design Fee Versus Design Deficiency, 41

Fiber composites

- Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

Fiber optics

- Determination of Heat Production Zones at Open-Cast Mine Dump, 451
- Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438
- Vibration Control of Flexible Manipulators Using Smart Structures, 28

Fiber reinforced materials

- FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145
- Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133
- Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238

1998 ASCE TRANSACTIONS

Fiber reinforced plastics

- Actions for Verification of RC Structures with FRP Bars, 132
 - Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137
 - Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135
 - Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122
 - Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269
 - A Composite Sketch, 1409
 - Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
 - Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118
 - Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
 - Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114
 - Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958
 - Effect of Column Parameters on FRP-Confined Concrete, 136
 - Effect of Helical Wrapping on Fatigue Resistance of GFRP, 128
 - Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115
 - Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131
 - Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120
 - Fatigue Response of Concrete Decks Reinforced with FRP Rebars, 1025
 - Model of Concrete Confined by Fiber Composites, 1137
 - Muscle Made of Carbon Fiber, 1410
 - New Ductile Hybrid FRP Reinforced Bar for Concrete Structures, 117
 - Shake, Rattle and Hold (Available in Structural Engineering Special Issue Only), 1539
 - Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
 - State of Restored Practice Review in FRP Composite Piling, 127
 - Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124
 - Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130
 - Tensile and Nondestructive Testing of FRP Bars, 116
 - Ultrasonic Techniques to Characterize Pultruded Composite Members, 129
- ## Fiberglass
- Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269
- ## Fibers
- Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125
 - Confined Concrete Subjected to Uniaxial Monotonic Loading, 363
 - Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639
 - In-Stream Hollow-Fiber Membrane Aeration, 715

SUBJECT INDEX

- Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
- Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971
- Smokestack Rescue, 1457
- Solitary Waves in Flexible, Arbitrary Elastic Helix, 324

Field investigations

- Alternative Landfill Covers Pass the Test, 1496
- Canal Control Algorithms Currently in Use, 851
- Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225
- Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382
- Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
- Ice Thrust in Reservoirs, 89
- Observed Performance of Multipropped Excavation in Stiff Clay, 608
- Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686
- Seismic Performance of Confined Sill Plate Connections, 3
- Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713
- Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700

Field tests

- Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186
- Bridge Fatigue Life Estimation From Field Data, 1399
- Evaluation of Existing RC Slab Bridges, 990
- Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991
- Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183
- Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83
- Identifying Component Variability of End Product Specification Tests, 155
- Method for Railroad Track Foundation Design. II: Applications, 556
- Optically Powered Electrical Accelerometer and Its Field Testing, 271
- PCC Airfield Pavement Response During Thaw-Weakening Periods, 87
- Service Load Response of Masonry Arch Bridges, 1026
- Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537
- Suitability of Selected Flow Equations and Variation of Manning's n in Furrow Irrigation, 862
- Three-Dimensional Numerical Model for Flow through Natural Rivers, 642
- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

Fills

- Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984
- Putting Polystyrene to Work, 1435
- Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629

Finite element method

Filters

- Apparatus for Streaming Potential Measurements on Granular Filter Media, 522
- Clearing the Air, Biologically, 1495
- Comparison of Autotrophic and Mixotrophic Biofilters for H_2S Removal, 415
- Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293
- Monitoring Biofilters Used for Air Pollution Control, 1370

Filtration

- Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Flocs, 471
- Does Filtration Efficiency Affect Measurements of Particle Chemical Composition?, 454
- Efficiency in the Bag, 1498
- Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406
- Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520
- Filtration and Drainage in Geotechnical/Geoenvironmental Engineering, 1566
- Initial Settling Rate/Concentration Relationship in Zone Settling, 379
- NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505
- Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374
- Surfactants for Separation Processes: Enhanced Ultrafiltration, 458

Financing

- Maintenance of Municipal Infrastructure, 844
- Shadow Tolls, 1441

Finite difference method

- Modeling Well Hydrodynamics, 783
- Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870
- Unified Finite Difference Formulation for Free Vibration of Cables, 1165

Finite differences

- Linking Hydrodynamic and Water Quality Models with Different Scales, 419

Finite element method

- Analysis of Granular Bases Using Discrete Deformable Blocks, 1267
- Applications of FEM on Free and Forced Vibration of Laminated Shells, 204
- Behavior of Elastomeric Bridge Bearings: Computational Results, 73
- Castellated Beam Web Buckling in Shear, 1154
- Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339
- Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072
- Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174
- Cyclic Elastoplastic Large Deflection Analysis of Thin Steel Plates, 252
- Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299
- Design and Simulation of Large Breakaway Signs, 1201

- Dynamic Properties of Solid Waste Based on Back-Analysis of Oil Landfill, 545
- Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68
- Effective Temperature Differential in Concrete Pavements, 1208
- Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745
- FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132
- FE Model of Steel Plate Shear Wall, 1038
- FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163
- Finite-Element Analyses of Flexible Pavements, 1258
- Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346
- Finite-Element Model for Confined Concrete Columns, 1135
- Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035
- Flutter Stability of Very Long Suspension Bridges, 72
- Interference Assemblies, 209
- Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542
- Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
- Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155
- Low Velocity Impact Resistance of Laminated Architectural Glass, 37
- Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
- Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822
- Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798
- Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086
- Performance of Profiled Concrete Shear Panels, 1065
- Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101
- Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- Service Load Response of Masonry Arch Bridges, 1026
- Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051
- Streamline Upwind Finite-Element Method for Overland Flow, 689
- Stress Distribution at PTFE Interface in Cylindrical Bearing, 77
- Structural Damage Detection Using Artificial Neural Networks, 838
- Structural Identification: Analytical Aspects, 1114
- Thermal Analysis of Reinforced-Concrete Shells, 1036
- Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730
- Threshold Between Smooth and Wavy Laminar Sheet Flow, 253
- Two-Step Identification Approach for Damped Finite Element Models, 287
- Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283
- Finite elements**
- 2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303
- Analysis of Cone Resistance: Review of Methods, 538
- Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Comparing Two Algorithms to Add Large Strains to Small-Strain FE Code, 321
- Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168
- Dynamic Analysis of Existing Continuous Bridge, 60
- Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
- Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102
- Layerwise Composite Plate Analysis Using an Element Template Methodology, 281
- Modeling Density and Turbulence in Stratified Tidal Medium, 662
- Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055
- Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79
- Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058
- On Stability of Multistep Integration Procedures, 303
- Plastic Collapse Analysis of T-Beams Under Bending, 307
- Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598
- Proof of Tienstra's Formula for an External Observation Point, 1184
- Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126
- Rotating Crack Model with Transition to Scalar Damage, 242
- Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62
- Strength of DT Tubular Joints with Brace and Chord Compression, 1109
- Strength of Plate Girder Web Panels under Pure Shear, 1045
- Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066
- Tire Contact Using Two-Dimensional Finite Elements, 250
- Fire resistance**
- Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097
- Fire resistant materials**
- Energy-Storing Wallboard: Flammability Tests, 963
- Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097
- Fire safety**
- Future Fire Codes, 1453

SUBJECT INDEX

Fire tests

Review of Mechanical Properties of HSC at Elevated Temperature, 959

Fires

Numerical Studies on Recent Large High-Rise Buildings Fire, 44

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042

Fish protection

Methodology for Predicting Cooling Water Effects on Fish, 447

Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

Numerical Flow Model for Fish Diversion Studies at Wanapum Dam, 784

Fissures

Slope Stability Analyses in Stiff Fissured Clays, 14

Fixed-bed operations

Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484

Fixed-end beams

Design of Lipped Channel Columns, 1040

Tests of Fixed-Ended Plain Channel Columns, 1039

Fjords

Marine Tailings Disposal Simulation, 691

Flanges

Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119

Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120

Flash floods

Stream Gauging of Torrential Rivers of Eastern Eritrea, 816

Flexibility

Capacity of Masonry Arches and Spatial Frames, 1096

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160

Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031

Flexible Dual Membrane Wave Barrier, 1353

Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Flexible pavements

Analysis of Granular Bases Using Discrete Deformable Blocks, 1267

Finite-Element Analyses of Flexible Pavements, 1258

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Flexible pipes

Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619

Flexural strength

Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024

Flexural Capacity of Pressurized Steel Pipe, 1061

Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123

Flexure

Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122

Flexural Behavior of Steel Fiber Reinforced Concrete, 962

Generalized Warping Torsion Formulation, 249

Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138

Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044

Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124

Floating ice

Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364

Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365

Floating structures

Analysis of Floating Roofs by ODE-Solver Method, 343

Mix and Match, 1413

Flocculants

Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Flocs, 471

Alum Residual Floc Interactions with an Advancing Ice/Water Interface, 403

Floes

Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213

Flood control

Floodplain Management, 1434

Inviting Trouble Downstream, 1417

Reservoir Operation Studies of Sabarmati System, India, 1285

Step by Step, 1490

When the Levee Inflates, 1411

Flood Management

Floodplain Management, 1434

Input-Output Economic Evaluation of System of Levees, 1306

Inviting Trouble Downstream, 1417

Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785

Flood peaks

Flood Peak Attenuation and Forecast, 793

Flood plain planning

Floodplain Management, 1434

Flood plains

2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303

Floodplain Management, 1434

Higher Ground, 1501

Input-Output Economic Evaluation of System of Levees, 1306

Inviting Trouble Downstream, 1417

Lateral Flow Exchange in Transient Compound Channel Flow, 650

Flood plains

Flood routing

Flood routing

Analysis of Linear and Monoclonal River Wave Solutions, 734

Particle Model for Simulating Flow Over Large Areas, 712

Flood stages

Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804

Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805

Flooding

Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291

Floodplain Management, 1434

Lateral Flow Exchange in Transient Compound Channel Flow, 650

Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332

River Flood Flow and Its Energy Loss, 674

Floods

2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303

Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796

Assessment of Scaling Behavior of Regional Floods, 811

Coastal Flood Risk Assessment, 1348

A Corps Chief Looks at "Rising Tide", 1418

Effect of Trimming on LP III Flood Quantile Estimates, 795

Multivariate Modeling of Flood Flows, 663

Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Floors

Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097

Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140

Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141

Florida

Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284

Evapotranspiration of Melaleuca Forest in South Florida, 807

Performance Comparison of Overland Flow Algorithms, 688

Wetland Wonder, 1535

Flotation

Classification of Flotation Processes in Wastewater Decontamination, 427

Flow

Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886

Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400

Experimental Investigation of Flow Past Submerged Vanes, 709

Fluid Mechanics: An Interactive Text, 1567

1998 ASCE TRANSACTIONS

Lateral Flow Exchange in Transient Compound Channel Flow, 650

Rheological Equations in Asymptotic Regimes of Granular Flow, 245

Scouring in Long Contractions, 884

Two Applications of Flow in Porous Media with Threshold Gradient, 801

Flow characteristics

Characteristics of Shallow Rain-Impacted Flow over Smooth Bed, 788

Darcian, Transitional, and Turbulent Flow through Porous Media, 746

Direct Determination of Rheological Characteristics of Debris Flow, 749

Effects of Construction Joint in Mass Flowable Concrete, 955

Flow Characteristics of Chimney Weir under Submergence, 863

Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696

Material Properties of Self-Flowing Concrete, 982

Particle Model for Simulating Flow Over Large Areas, 712

Flow control

Fluidic Device for Surge Flow Irrigation, 885

Flow distribution

Multi-Fed Upflow Anaerobic Filter: Development and Features, 517

TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441

Flow duration

Multivariate Modeling of Flood Flows, 663

Flow measurement

Calculation of Channel and River Velocities, 750

Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738

Head-Discharge Relationship in Flumes of Compound Sections, 874

Modeling the Heat Sense Flowmeter, 871

Rating Adjustment for Settlement of Cutthroat Flumes, 893

Flow patterns

Generalized Culvert Design Diagram, 887

Flow rates

Error Analysis of Flow Meter Measurements, 883

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Flow resistance

Colebrook-White Formula for Pipe Flows, 655

Estimation of Gravel-Bed River Flow Resistance, 769

Resistance and Drag Reduction of Flows of Clay Suspensions, 645

Scouring in Long Contractions, 884

Upper-Regime Plane Bed, 773

Flow separation

Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735

Flow simulation

Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777

SUBJECT INDEX

Fouling

Flue gases

Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521

Fluid dynamics

Assessment of Hindered Settling of Fluid Mudlike Suspensions, 666

Erosion of Fluid Mud Layers. I: Entrainment Model, 8
Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212

Fluid flow

Drift Velocity Concept for Sediment-Laden Flows, 765

Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392

Modeling Well Hydrodynamics, 783

Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Fluid mechanics

Fluid Mechanics: An Interactive Text, 1567

High-Tech Text, 1459

Solutions Manual-Fluid Mechanics: An interactive Text, 1595

Fluidized bed combustion

Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629

Fluidized bed processors

Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375

Fluidized Bed for Removing Iron and Acidity from Acid Mine Drainage, 459

Flumes

Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772

Head-Discharge Relationship in Flumes of Compound Sections, 874

Rating Adjustment for Settlement of Cutthroat Flumes, 893

Flushing

Laboratory Study of Soil Flushing by Aqueous Solutions, 617

Flutter

Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295

Bridge Flutter Derivatives at Vortex Lock-In, 1074

Complex Notation in Flutter Analysis, 1131

Flutter Stability of Very Long Suspension Bridges, 72

Fluvial hydraulics

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762

River Width Adjustment. I: Processes and Mechanisms, 751

Fly ash

Fly Ash Binders in the Stabilization of FGD Wastes, 380

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Model of Leaching Behavior from Fly Ash Landfills with Different Age Refusals, 467

Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973

Footings

Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550

Force

New Seismic Testing Method. I: Fundamental Concepts, 277

New Seismic Testing Method. II: Proof for MDOF Systems, 278

Recursive Formulation of Force Method Programmed in Logic, 93

Theoretical and Experimental Investigation of Helical Cardiac Leads, 214

Forecasting

Flood Peak Attenuation and Forecast, 793

Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829

River Stage Forecasting Using Artificial Neural Networks, 794

State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293

Foreign firms

Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180

Managing Your Career in an Era of Change, 1019

Foreign projects

Bidding Considerations in Developing Countries, 162

Project Delivery and the U.S. Dept. of State, 947

Foreign trade

Obstacles and Opportunities in International Engineering Services, 936

Forestry

Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409

Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410

Forests

Evapotranspiration of Melaleuca Forest in South Florida, 807

Formwork, construction

Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122

Early Form Removal of Reinforced Concrete Slabs, 1390

Investigating the Adequacy of Vertical Design Loads for Shoring, 993

Fouling

Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520

NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505

Foundation design

Foundation design

Lateral Load Behavior of Full-Scale Pile Group in Clay, 570

Foundation investigations

Inspecting the Unknown (Available in Geo-Environmental Special Issue Only), 1518

Foundations

Elastic Subsurface Stress Analysis for Circular Foundations. I, 274

Elastic Subsurface Stress Analysis for Circular Foundations. II, 275

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Fourier series

Interference Assemblies, 209

Fourier transform

Moving Loads on a Plate on Elastic Foundation, 329

Fractal analysis

Fractal Model for Flow Through Saturated Soils, 529

Fracture mechanics

Analysis of Rotating Crack Model, 310

Crack Growth Analysis in Reinforced Concrete Using BEM, 322

Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83

Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216

Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79

Rotating Crack Model with Transition to Scalar Damage, 242

Simplified Model of Low Cycle Fatigue for RC Frames, 1143

Fracture strength

Behavior and Strength of Laminated Glass, 210

Fracture Behavior of Geosynthetic Interlayers in Road Pavements, 1255

Fractures

Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213

Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118

Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316

Representative Ground Water Monitoring in Fractured Porous Systems, 436

Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119

Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120

Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Through-Thickness Properties of Structural Steels, 1104

Frame design

Practical Analysis for Partially Restrained Frame Design, 1105

Framed structures

Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102

1998 ASCE TRANSACTIONS

Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010

Summary of SAC Case Study Building Analyses, 1012
System Reliability Evaluation of Ductile Frame Structures, 1099

Frames

Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372

Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79

Simplified Model of Low Cycle Fatigue for RC Frames, 1143

Structural Damage Detection Using Artificial Neural Networks, 838

Frazil ice

Longitudinal Dispersion on Ice-Covered Rivers, 90

Free flow

Discharge Equation for Rectangular Slots, 759

Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet, 767

Recirculating Flow Generated by Line-Source Bubble Plumes, 754

Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768

Free surfaces

Gradually Varied Flow Solutions in Newton-Raphson Form, 881

An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326

Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728

Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341

Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768

Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729

Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656

Freeze-thaw cycle

Climatic Soil Freezing Modeled in Centrifuge, 636

Freeze-thaw durability

Prediction of Freezing and Thawing Durability of Concrete Paving Blocks, 957

Freezing

Alum Residual Flocc Interactions with an Advancing Ice/Water Interface, 403

Climatic Soil Freezing Modeled in Centrifuge, 636

Soil Improvement for Big Digs, 1594

Freight transportation

Freight Pipelines: Current Status and Anticipated Future Use, 1235

Tunnel Construction Costs for Tube Transportation Systems, 145

Frequencies

On Stability of Multistep Integration Procedures, 303

Frequency

Axial Fatigue Performance of Cold-Formed Steel Sections, 1041

SUBJECT INDEX

Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27
Simplified Frequency Content Estimates of Earthquake Ground Motions, 539

Frequency analysis

Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796
Effect of Trimming on LP III Flood Quantile Estimates, 795

Frequency response

Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266
Inspecting the Unknown (Available in Geo-Environmental Special Issue Only), 1518

Fresh water

Mixing Behavior of Density-Stratified Pools, 680
Residence Time of Freshwater in Boston's Inner Harbor, 1333

Friction

Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549
Friction Slope in Depth-Averaged Flow, 651
Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236
Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062

Friction coefficient, hydraulic

Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220
Relationships for Non-Darcy Flow in Rockfill, 670
Threshold Between Smooth and Wavy Laminar Sheet Flow, 253

Friction factor

Darcian, Transitional, and Turbulent Flow through Porous Media, 746
Effect of Bed-Load Movement on Flow Friction Factor, 665
Effects of Sediment Transport on Bed Friction and Turbulence, 1343
Estimation of Gravel-Bed River Flow Resistance, 769
Longitudinal Dispersion on Ice-Covered Rivers, 90
Prediction of Discontinuity in Stage-Discharge Rating Curves, 677
Resistance and Drag Reduction of Flows of Clay Suspensions, 645
Roughness of Loose Rock Riprap on Steep Slopes, 667

Frost heave

Climatic Soil Freezing Modeled in Centrifuge, 636
Predicting Frost Heave Using FROST Model with Centrifuge Models, 84

Frost penetration

Comparative Study of Durability Indices for Clay Bricks, 39
Development of New Durability Index for Clay Bricks, 47
PCC Airfield Pavement Response During Thaw-Weakening Periods, 87

Froude number

Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711

Gas flow

Fuels

Pump-and-Treat Rescue, 1432
Site Investigations of Fuel Spill Migration into Permafrost, 85

Full-scale tests

Axial and Bending Behavior of Composite Walling, 1107
Beam-Column Method for Tieback Walls, 530
Decomposition of Specific Materials Buried within Sanitary Landfills, 518
Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594
Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549
Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121
Observed and Computed Settlements of Two Shallow Foundations on Sand, 581
Pendulum Impact Tests on Steel W-Beam Guardrails, 1237
Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613
Slope Stability of Geosynthetic Clay Liner Test Plots, 584
Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042

Funding allocations

Collaborations Keynote Address, 921
TEA-21: Something for Everyone, 1507

Furrow irrigation

Suitability of Selected Flow Equations and Variation of Manning's n in Furrow Irrigation, 862

Fuzzy sets

Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95
Competitive Bidding Strategy Model and Software System for Bid Preparation, 139
Fuzzy Logic for Evaluating New Construction Technology, 175
Fuzzy Optimization Model for Water Quality Management of River System, 1290
Fuzzy Pattern Recognition Model for Diagnosing Cracks in RC Structures, 101
Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846
Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Gabions

Calculating Average Filling Rock Diameter for Gabion-Mattress Channel Design, 760

Gas flow

BEM Solution for Design of Trenches in Multilayered Landfills, 382
Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797
Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499
The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Gas formation

Gas formation

Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382

Flux Chamber Measurements of Mass Transfer Rates, 387

Gates

Discharge Equation for Rectangular Slots, 759

Double-Leaf Gate for Energy Dissipation below Regulators, 778

Forces on Edge-Hinged Panels in Gradually Varied Flow, 743

Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219

Oscillating Tidal Barriers and Random Waves, 694

Gaussian process

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290

Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238

Simulation of Stationary Non-Gaussian Translation Processes, 220

Geographic information systems

Applications of Advanced Technologies in Transportation, 1545

Decision Support System for Conjunctive Stream-Aquifer Management, 1289

DEM Based Overland Flow Routing Model, 791

Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291

Developing Small Area Network Planning Models Using Desktop GIS, 1275

Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273

Getting the GIS of Costs, 1478

GIS Errors and Surface Hydrologic Modeling: An Examination of Effects and Solutions, 1190

GIS Technology for Civil Engineering Education, 1016

Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366

Location of Recycling Depots with GIS, 1277

Modeling Spatial Variability of Rainfall Over a Catchment, 806

Seismic Performance Assessment of Water Delivery Systems, 841

Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865

Water Resources and the Urban Environment, 1607

Water Resources and the Urban Environment-98, 1608

Geogrids

Tensile Properties of Geogrids Under Cyclic Loadings, 597

Geoid

GPS Heighting in Okavango Delta, 1191

Geology

High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370

Geomembranes

Antioxidant Depletion Lifetime in High Density Polyethylene Geomembranes, 576

1998 ASCE TRANSACTIONS

Geometric nonlinearity

Behavior of Elastomeric Bridge Bearings: Computational Results, 73

FE Analysis of Tucker High School Roof Using Non-linear Geometry and Creep, 1132

Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102

Geometry

Design for Hydraulic Geometry of Alluvial Channels, 702

Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236

Free Vibration Analysis of Thick Superelectrical Plates, 222

Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232

Influence of Canal Geometry and Dynamics on Controllability, 852

Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774

Surface-Subsurface Model for Trench Infiltration Basins, 1311

Geophysical surveys

Geophysical Exploration for Engineering and Environmental Investigations, 1568

Role of Geophysics in Expedited Site Characterization: Case History, 1365

Geosynthetics

Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621

Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528

Filtration and Drainage in Geotechnical/Geoenvironmental Engineering, 1566

Fracture Behavior of Geosynthetic Interlayers in Road Pavements, 1255

Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569

Internal Shear Strength of Three Geosynthetic Clay Liners, 612

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Photo-Initiated Degradation of Geotextiles, 633

Slope Stability of Geosynthetic Clay Liner Test Plots, 584

Stretching a Landfill, 1486

Geotechnical engineering

Karl Terzaghi: The Engineer as Artist, 1580

Recycled Materials in Geotechnical Applications, 1588

Spatial Liquefaction Analysis System, 96

Geotechnical investigations

Case Study of Slope Failures at Spilmans Island, 626

Geotextiles

Case Study of Slope Failures at Spilmans Island, 626

Filtration and Drainage in Geotechnical/Geoenvironmental Engineering, 1566

Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628

Photo-Initiated Degradation of Geotextiles, 633

SUBJECT INDEX

Groins, structures

Germany

Case Study of Bridge Design Competition, 67

Girders

Bridge Fatigue Life Estimation From Field Data, 1399

Composite Girder Design of Cable-Stayed Bridges, 1401

Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68

Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127

Girts

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Glass

Behavior and Strength of Laminated Glass, 210

Low Velocity Impact Resistance of Laminated Architectural Glass, 37

A Museum for the Heavens, 1456

Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978

Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48

Glass fibers

Effect of Helical Wrapping on Fatigue Resistance of GFRP, 128

Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120

Glass reinforced plastics

Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137

Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123

Glass standards

Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049

Global positioning

Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186

Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183

GLONASS Satellite Surveying, 1187

GPS Heighting in Okavango Delta, 1191

Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182

Stochastic Modeling for Static GPS Baseline Data Processing, 1193

Gruing

Upgrading Continuous Reinforced Concrete Beams by Gruing Steel Plates to Their Tension Faces, 1050

Goals

Quantification of Construction Clients' Needs Through Paired-Comparisons, 907

Government agencies

Project Delivery and the U.S. Dept. of State, 947

Government policies

A Corps Chief Looks at "Rising Tide", 1418

Government role

Collaborations Keynote Address, 921

Gradient

Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598

Graduate study

Project-Based Course for Integration of Design and Construction at WPI, 1021

Granular materials

Experimental Study of Drained Creep Behavior of Sand, 318

Mechanics of Granular Materials at Low Effective Stresses, 25

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Granular media

Apparatus for Streaming Potential Measurements on Granular Filter Media, 522

Direct Determination of Rheological Characteristics of Debris Flow, 749

Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288

Method for Railroad Track Foundation Design. I: Development, 555

Method for Railroad Track Foundation Design. II: Applications, 556

New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510

Rheological Equations in Asymptotic Regimes of Granular Flow, 245

Graph theory

Detecting Accidental Contaminations in Municipal Water Networks, 1301

Graphic methods

Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206

Graphic techniques

Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176

Net Gains, 1522

Gravel

Estimation of Gravel-Bed River Flow Resistance, 769

Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739

Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325

Shear Modulus and Damping Relationships for Gravels, 563

Gravity

Gravitational Fall Velocity of Sphere in Viscous Fluid, 350

Numerical Simulation of Gravity Current Front, 714

Gravity walls

Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564

Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565

Grease

Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374

Groins, structures

Shear Stress around Vertical Wall Abutments, 744

Ground anchors

Ground anchors

Pullout Resistance of High-Voltage Strengthened Ground Anchors, 603

Ground motion

Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604

Bayesian Updating of Fragilities with Application to RC Frames, 1125

Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582

Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291

Dynamics of Rigid Block Due to Horizontal Ground Motion, 294

Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558

Effects of Spatially Varying Ground Motions on Short Bridges, 1128

Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124

Geotechnical Earthquake Engineering and Soil Dynamics III, 1570

Observed Performance of Multipropped Excavation in Stiff Clay, 608

Settlement Behavior of Posttensioned Slabs-on-Grade, 995

Simplified Frequency Content Estimates of Earthquake Ground Motions, 539

Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585

Ground water

After the Rain Has Fallen: Ground Water Management Symposium, 1541

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Computational Issues for Optimal In-Situ Bioremediation Design, 1286

Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435

Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439

Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297

Evaluation of Containment Systems Using Hydraulic Head Data, 443

Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821

Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295

Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515

Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516

Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440

Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431

Presence of Nonconvexity in Groundwater Concentration Response Function, 1282

Representative Ground Water Monitoring in Fractured Porous Systems, 436

Site Characterization and Containment Assessment with Dissolved Gases, 442

Stochastic Approach to Delineating Wellhead Protection Areas, 1302

System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408

Three-Dimensional Model for Subsurface Transport and Biodegradation, 412

VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

Ground-water flow

Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

Significance of Defects in Annular Well Seals, 1368

TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441

Ground-water management

After the Rain Has Fallen: Ground Water Management Symposium, 1541

Decision Support System for Conjunctive Stream-Aquifer Management, 1289

Ground-water pollution

After the Rain Has Fallen: Ground Water Management Symposium, 1541

Comparative Kinetics of Bacterial Reduction of Chromium, 424

Contaminant Source Solutions with Scale-Dependent Dispersivities, 824

Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382

Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288

Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373

Evaluating Health Risks From Ground-Water Contaminants, 429

Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392

Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502

Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485

Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283

Ground-water quality

Alternative Use of Multimodel Model for Subtitle D Landfill Applications, 1386

Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300

Mixed-Integer Chance-Constrained Models for Ground-Water Remediation, 1312

Presence of Nonconvexity in Groundwater Concentration Response Function, 1282

Water Resources and the Urban Environment-98, 1608

SUBJECT INDEX

Ground-water recharge

Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

Grout

Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64

Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65

Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527

Grouts and Grouting: A Potpourri of Projects, 1571

Should Grouted Anchors Have Short Tendon Bond Length?, 535

Grouting

Grouts and Grouting: A Potpourri of Projects, 1571

Growth projections

Thermal Ice Growth: Real-Time Estimation, 81

Guardrails

Motor Vehicle Death Reductions from Guardrail Installation, 1259

Pendulum Impact Tests on Steel W-Beam Guardrails, 1237

Guidelines

Design Guidelines for Design-Build Projects, 905

Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114

Future Fire Codes, 1453

Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573

Guidelines for Quarystone Armor Units, 194

On-Call Contracting Strategy and Management, 930

Priorities in Building Envelope Design, 42

Gusts

Design Gust Wind Speeds in the United States, 1048

Guy wires

Experimental Determination of Frequencies and Tension for Elastic Cables, 336

Gypsum

Drywall Joint Finishing: Productivity and Ergonomics, 181

Energy-Storing Wallboard: Flammability Tests, 963

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Half space

Elastic Subsurface Stress Analysis for Circular Foundations. I, 274

Elastic Subsurface Stress Analysis for Circular Foundations. II, 275

Hangers

Flutter Stability of Very Long Suspension Bridges, 72

Harbor structures

Seismic Guidelines for Ports, 1593

Harbors

Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327

New Type of Bottom Protection in Harbors—Design Method, 1347

Ports '98, 1587

Residence Time of Freshwater in Boston's Inner Harbor, 1333

Hardness

Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334

Hawaii

Mix and Match, 1413

Paradise Crossed, 1471

Hazardous materials

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Hazardous waste

HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379

Management of Solid Waste from Abrasive Blasting, 1369

Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417

Hazardous waste sites

Brownfields by the Book, 1520

Dealing with DNAPLs, 1521

Evaluation of Containment Systems Using Hydraulic Head Data, 443

Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450

Matrix Approach to Contaminant Transport Potential, 1377

Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

Role of Geophysics in Expedited Site Characterization: Case History, 1365

Superfund Success, Superfast, 1530

Health hazards

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Evaluating Health Risks From Ground-Water Contaminants, 429

Orientation to Health Risk Assessment for Practicing Engineers, 1364

Psychology of Accident Prevention in the Construction Industry, 924

Heat distributing units

Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

Heat storage

Energy-Storing Wallboard: Flammability Tests, 963

Heat transfer

Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339

Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367

Heat treatment

Heat treatment

High-Performance Powder, 1407

Heating

Viscous Heating of Fluid Dampers. I: Small-Amplitude Motions, 352

Viscous Heating of Fluid Dampers. II: Large-Amplitude Motions, 353

Heaving

Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186

Heavy metals

Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514

Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468

Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380

Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512

A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502

Particle Size Distribution and Metal Content in Street Sediments, 466

Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385

Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484

Surfactants for Separation Processes: Enhanced Ultrafiltration, 458

Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Wetland Wonder, 1535

Height

GPS Heighting in Okavango Delta, 1191

Overtopping Reliability Models for River Levee, 786

Helixes

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Solitary Waves in Flexible, Arbitrary Elastic Helix, 324

Theoretical and Experimental Investigation of Helical Cardiac Leads, 214

Heuristics

Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296

High strength concretes

Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027

Confinement Reinforcement Design Considerations for Ductile HSC Columns, 1134

Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174

Finite-Element Model for Confined Concrete Columns, 1135

High-Performance Powder, 1407

High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175

Material Properties of Self-Flowing Concrete, 982

Reliability Assessment of High-Strength Concrete Columns, 273

Review of Mechanical Properties of HSC at Elevated Temperature, 959

1998 ASCE TRANSACTIONS

The Search for HPC (Available in Structural Engineering Special Issue only), 1491

Seismic Performance of High-Strength Concrete Columns, 1052

Shrinkage Cracking of Restrained Concrete Slabs, 301

Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051

Transmission of Interior Concrete Column Loads through Floors, 1091

High strength steel

Making the Grade, 1446

High technology

High-Tech Text, 1459

Seminar Review: Applying Technology in Project Management and Product Design, 935

Highway accident potential

Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95

Highway construction

Incentive/Disincentive Contracts: Perceptions of Owners and Contractors, 183

Lane Rental—Innovative Way to Reduce Road Construction Time, 188

Neural Network Model for Parametric Cost Estimation of Highway Projects, 165

Paradise Crossed, 1471

Performance-Related Specifications for Highway Construction, 142

Regularization Neural Network for Construction Cost Estimation, 141

Shadow Tolls, 1441

Toward Improved Highway Quality: Lessons from Western Europe, 906

Highway design

Design Considerations of Sight Distance Red Zones on Crest Curves, 1240

Design of Sag Vertical Curves in Three-Dimensional Alignments, 1200

Design Requirements of Equal-Arc Unsymmetrical Vertical Curves, 1247

Paradise Crossed, 1471

Revised Design Parameters for Vertical Curves, 1238

Superelevation, Side Friction, and Roadway Consistency, 1249

Highway improvements

Alaska's Last Link, 1536

Privatization and the Public/Private Partnership, 928

Highway maintenance

Climate Control, 1489

Privatization and the Public/Private Partnership, 928

Highway management

Simulating Highway Infrastructure Management Policies, 938

Traffic and Transportation Studies, 1601

Highway planning

Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829

Shoring Up Lake Shore Drive, 1472

SUBJECT INDEX

Highway safety

- Aspects of Stopping-Sight Distance on Crest Vertical Curves, 1239
- Critical Impact Point for Longitudinal Barriers, 1202
- Design and Simulation of Large Breakaway Signs, 1201
- Motor Vehicle Death Reductions from Guardrail Installation, 1259
- Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846
- Superelevation, Side Friction, and Roadway Consistency, 1249

Highway structures

- Cementing the Future, 1531

Highways

- Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222
- Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444
- Characterization of Highway Runoff in Austin, Texas, Area, 389
- I.T.S. On the Way, 1512
- New Model for Passing Sight Distance on Two-Lane Highways, 1263
- Open-Graded Highway Bases Make Permeameter Setup Important, 1213
- Performance of Vegetative Controls for Treating Highway Runoff, 509
- Rapid Redecking, 1445
- Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000
- Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843
- Speed and Delay on Signalized Arterials, 1230
- Three-Arc Vertical Curve for Constrained Highway Alignments, 1216
- Toward Improved Highway Quality: Lessons from Western Europe, 906
- Use of Regression Models for Analyzing Highway Stormwater Loads, 493

Hinges

- Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304

Historic sites

- Engineering History and Heritage, 1563
- Preservation of Historic Thin-Shell Concrete Structures, 36
- Rebuilding History, 1510
- Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181

History

- A Corps Chief Looks at "Rising Tide", 1418
- Engineering History and Heritage, 1563
- Karl Terzaghi: The Engineer as Artist, 1580

Hollow sections

- Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Design Guidelines for Longitudinal Plate to HSS Connections, 1110
- Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068

Hydraulic conductivity

- Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140

- Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141

Hong Kong

- Consequences of Construction Conflict: A Hong Kong Perspective, 926
- Hovering Over the Harbor, 1452

Horizontal flow

- Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Hospitals

- Lessons from an Outpatient Surgery Center, 46
- Solid Footing (available in Geoenvironmental Special Issue only), 1469
- Trends in the Construction Needs of Hospital Facilities, 53

Housing

- Step by Step, 1490

Human behavior

- Aspiring to and Preparing for Engineering Firm Ownership, 913
- Fall Protection Analysis for Workers on Residential Roofs, 189
- Integrated Modeling of Urban Shopping Activities, 1278
- Investigation on Latent Factors Affecting Route Diversion Intentions, 1242
- Personality of Civil Engineers, 931
- Psychology of Accident Prevention in the Construction Industry, 924
- Trip Linkage Patterns for Workers, 1231

Human factors

- Comparison of Perception Versus Reality in Timber Bridge Performance, 981
- Investigation on Latent Factors Affecting Route Diversion Intentions, 1242
- Personality of Civil Engineers, 931

Human-computer interaction

- Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176

Humidity

- Air Flow as Monitoring Technique for Landfill Liners, 437
- Bridge Prestress Losses in Dry Climate, 69
- Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340

Hurricanes

- Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592

Hydraulic conductivity

- A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827
- Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601
- Fractal Model for Flow Through Saturated Soils, 529
- Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

- Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536
- Open-Graded Highway Bases Make Permeameter Setup Important, 1213
- Permeation of Sand-Processed Clay Mixtures with Calcium Chloride Solutions, 547
- Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823
- Surface-Subsurface Model for Trench Infiltration Basins, 1311
- Theory of Pipe Drainage Assisted by Mole Drainage, 864
- Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540
- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

Hydraulic design

- Simplified Dynamic Reliability Models for Hydraulic Design, 687

Hydraulic gradients

- Monitoring Hydraulic Gradient Using Three-Point Estimator, 434

- Relationships for Non-Darcy Flow in Rockfill, 670

Hydraulic jump

- Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669

- Spatial B-Jump at Sudden Channel Enlargements with Abrupt Drop, 724

Hydraulic loading

- Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474

Hydraulic models

- Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739

- Modified Pipe Network Model for Incorporating Peak Demand Requirements, 1313

- Sediment Control at Water Intakes Along Sand-Bed Rivers, 716

- Soil Hydraulic Models Selection Based on In-Situ Measurements, 889

- Structural Ice Control Alternatives for Middle Mississippi River, 91

- Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

- Water Resources and the Urban Environment, 1607

- Weighted Implicit Finite-Volume Model for Overland Flow, 755

Hydraulic performance

- Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202

Hydraulic properties

- Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601

Hydraulic structures

- Double-Leaf Gate for Energy Dissipation below Regulators, 778

- Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

- Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726

Hydraulics

- Aeration Performance of Triangular Plan-Form Labyrinth Weirs, 460
- Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891
- Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894
- Design for Hydraulic Geometry of Alluvial Channels, 702
- End Depth in Circular Channels, 748
- Flow Around Bridge Piers, 681
- Forces on Edge-Hinged Panels in Gradually Varied Flow, 743
- Generalized Culvert Design Diagram, 887
- Hydraulic Estimation of Dispersion Coefficient for Streams, 684
- Hydraulics of "Duckbill" Elastomer Check Valves, 693
- Hydraulics of Embankment Weirs, 758
- Hydraulics of Open Channel Flow, 1575
- Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781
- Introduction of Smith Predictor into Dynamic Regulation, 856
- Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461
- Nondimensional Expression of Unsteady Canal Flow, 858
- Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700
- TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441
- Water Distribution in Very High Velocity Water Jets in Air, 725
- Water Resources Engineering '98, 1609

Hydrocarbons

- Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826
- Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393
- Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485
- Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401
- Site Investigations of Fuel Spill Migration into Permafrost, 85
- Three-Dimensional Model for Subsurface Transport and Biodegradation, 412
- Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Hydrodynamic pressure

- Experimental Study of Small Scale Dam Models, 356
- Forces on Edge-Hinged Panels in Gradually Varied Flow, 743
- Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728

Hydrodynamics

- Determination of Velocity in Estuary for Bridge Scour Computations, 720
- Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225
- Estuarine and Coastal Modeling, 1564
- Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771

SUBJECT INDEX

- Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290
- General Hydrodynamic Model for Sewer/Channel Network Systems, 683
- Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327
- Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354
- Linking Hydrodynamic and Water Quality Models with Different Scales, 419
- Modeling Well Hydrodynamics, 783
- Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753
- Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480
- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069
- Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729
- Three-Dimensional Simulation of Scour-Inducing Flow at Bridge Piers, 708
- Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731
- Hydroelectric powerplants**
- Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574
- Numerical Flow Model for Fish Diversion Studies at Wanapum Dam, 784
- Hydrogen peroxide**
- Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425
- Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
- Hydrogen sulfide**
- Comparison of Autotrophic and Mixotrophic Biofilters for H_2S Removal, 415
- Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414
- Hydrographic surveys**
- Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186
- Hydrographic Surveying, 1576
- Hydrographs**
- Models of Storm Sewers Discharge: 1. Description, 445
- Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804
- Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805
- Hydrologic data**
- Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796
- Hydrologic models**
- Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882
- Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792
- GIS Errors and Surface Hydrologic Modeling: An Examination of Effects and Solutions, 1190
- Water Resources and the Urban Environment, 1607

Ice cover

- Weighted Implicit Finite-Volume Model for Overland Flow, 755
- Hydrology**
- Converting from Pan Evaporation to Evapotranspiration, 888
- GPS Heighting in Okavango Delta, 1191
- Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821
- River Stage Forecasting Using Artificial Neural Networks, 794
- Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810
- Water Resources Engineering '98, 1609
- Hydrostatic pressure**
- Experimental Study of Small Scale Dam Models, 356
- Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728
- Hypoplasticity**
- Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
- Hysteresis**
- FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163
- Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035
- Hysteresis models**
- Seismic Damage Assessment of Steel Frames, 1084
- Hysteretic systems**
- Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057
- I beams**
- Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155
- Strength of Webs Subjected to Compressive Edge Loading, 9
- Ice**
- Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812
- Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83
- Ice-Tank Data on Brash-Ice Loads against Barges, 88
- Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38
- Recent Progress in River Ice Engineering Research at CRREL, 86
- Ice control**
- Recent Progress in River Ice Engineering Research at CRREL, 86
- Structural Ice Control: A Review, 82
- Structural Ice Control Alternatives for Middle Mississippi River, 91
- Ice cover**
- Ice Thrust in Reservoirs, 89
- Longitudinal Dispersion on Ice-Covered Rivers, 90
- Structural Ice Control Alternatives for Middle Mississippi River, 91

Ice cover

Thermal Ice Growth: Real-Time Estimation, 81

Ice disintegration

Structural Ice Control: A Review, 82

Ice forces

Ice Thrust in Reservoirs, 89

Ice-Tank Data on Brash-Ice Loads against Barges, 88

Ice formation

Structural Ice Control: A Review, 82

Ice jams

Recent Progress in River Ice Engineering Research at CRREL, 86

Ice mechanics

Ice Thrust in Reservoirs, 89

Ice sheets

Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213

Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211

Identification

Adaptive H_∞ Filter: Its Application to Structural Identification, 355

Application of Wavelet Theory for Crack Identification in Structures, 224

Damage Identification Through Regularization Method I: Theory, 217

Damage Identification Through Regularization Method II: Applications, 218

Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335

Identity Crisis, 1462

Spectral Identification of Nonlinear Structural Systems, 296

Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129

Structural Identification: Analytical Aspects, 1114

Two-Step Identification Approach for Damped Finite Element Models, 287

Updating Models and Their Uncertainties. Part II: Model Identifiability, 264

Illinois

Improving IDOT's Pavement Condition Rating Process, 836

Image analysis

Imaging Technologies: Techniques and Applications in Civil Engineering, 1577

Morphological Study of Coarse Aggregates Using Image Analysis, 969

Novel System for Automatic Pavement Distress Detection, 104

Quantity of Alkali Silica Gel and Its Effect on Concrete Properties, 964

Images

Experiments on Saltation of Sand in Water, 764

Imaging techniques

Imaging Technologies: Techniques and Applications in Civil Engineering, 1577

Impact

Critical Impact Point for Longitudinal Barriers, 1202

Determining Schedule Impact: Working Practice, 1404

Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304

Effects of Construction on Structures, 1561

Measuring Droplet Impact Energy with Piezoelectric Film, 878

Methodology for Predicting Cooling Water Effects on Fish, 447

Impact forces

Low Velocity Impact Resistance of Laminated Architectural Glass, 37

Impact tests

Pendulum Impact Tests on Steel W-Beam Guardrails, 1237

Imperfections

Hyperbolic Cooling Towers with Bulge Imperfections, 359

Impingement

Methodology for Predicting Cooling Water Effects on Fish, 447

Implementation

Models of Construction Innovation, 167

Total Quality Management Implementations and Results: Progress Update, 1389

Impulsive loads

Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258

In situ tests

Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

In-Situ Determination of Soil Stiffness and Damping, 590

Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589

Process of In-Place Evaluation of Concrete Strength, 980

Incentives

Incentive/Disincentive Contracts: Perceptions of Owners and Contractors, 183

Lane Rental—Innovative Way to Reduce Road Construction Time, 188

Incineration

Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468

Incinerators

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Incipient motion

Clear-Water Contraction Scour under Bridges in Pressure Flow, 676

Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325

Inclusions

Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226

Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244

Solutions of Multilayer Inclusion Problems Under Uniform Field, 231

SUBJECT INDEX

Income analysis

Shadow Tolls, 1441

Incremental launching

Misplacement of Launching Bearings in PC Launched Bridges, 75

Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59

Indexing

Comparative Study of Durability Indices for Clay Bricks, 39

Development of New Durability Index for Clay Bricks, 47

India

Estimation of Delta Profile in the Indravati Reservoir, 659

Optimal Operation of South Indian Irrigation Systems, 1309

Indoor air pollution

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Industrial plants

Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403

Industrial wastes

Determination of Oxygen Diffusion Coefficient in Wastewaters, 405

Industries

Modeling Helps in Understanding Policy Alternatives: A Case, 901

Inelastic action

Experimental Study of Drained Creep Behavior of Sand, 318

Flexural Capacity of Pressurized Steel Pipe, 1061

Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124

Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152

Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070

Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044

Inertia

Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215

Infiltration

DEM Based Overland Flow Routing Model, 791

Effects of Infiltration on Agricultural Runoff Contamination, 478

Global Identification of Surface Irrigation Parameters, 869

Infiltration Model for Furrow Irrigation, 860

Kostiakov Infiltration Parameters from Kinematic Wave Model, 868

Surface-Subsurface Model for Trench Infiltration Basins, 1311

Two Applications of Flow in Porous Media with Threshold Gradient, 801

Urban Wet-Weather Flow Management: Research Directions, 1299

Infrastructure

Infinite elements

Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616

Inflatable structures

Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785

When the Levee Inflates, 1411

Inflow

Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872

Urban Wet-Weather Flow Management: Research Directions, 1299

Influents

Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463

Multi-Fed Upflow Anaerobic Filter: Development and Features, 517

Information management

Identifying Root Causes of Construction Injuries, 147

Information Management in a Collaborative Multiactor Environment: The COMMIT Approach, 103

Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185

Information Model for Managing Design Changes in a Collaborative Environment, 98

Managing Innovation Information in Engineering and Construction Firms, 903

Uncertainty and Home Builders' Adoption of Technological Innovations, 179

Information system design

Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185

Information systems

Climate Control, 1489

Computing in Civil Engineering, 1553

Simulating Highway Infrastructure Management Policies, 938

Infrastructure

Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550

Cost Allocation in Urban Infrastructure Funding, 1274

Deep Mixing Method: A Global Perspective, 1529

Design Guidelines for Design-Build Projects, 905

Downtown Goes Uptown in Stainless Steel, 1416

Evaluating Viability of Privatized Transportation Projects, 839

Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180

Guide to Post-Earthquake Investigation of Lifelines, 1572

Higher Ground, 1501

The Invisible Infrastructure, 1506

Maintenance of Municipal Infrastructure, 844

Optimal Performance of Civil Infrastructure Systems, 1584

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

Simulating Highway Infrastructure Management Policies, 938

Tomorrow's Civil Systems Engineer—The Master Integrator, 1017

Injection

Injection

Energy-Injecting Virtual Mass Resonant Column System, 566

Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526

Injuries

Motor Vehicle Death Reductions from Guardrail Installation, 1259

Injury rates

Motor Vehicle Death Reductions from Guardrail Installation, 1259

Inland waterways

Inland Navigation: Locks, Dams, and Channels, 1578

Innovation

Building Between Buildings (Available in Structural Engineering Special Issue Only), 1540

Case Study of Bridge Design Competition, 67

Framing a Work of Art, 1429

High-Performance Powder, 1407

How Creative Engineers Think, 1430

Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574

Lane Rental—Innovative Way to Reduce Road Construction Time, 188

Managing Innovation Information in Engineering and Construction Firms, 903

Methodology for Prioritizing Cost-Effective Construction Technologies, 161

Models of Construction Innovation, 167

Standing Firm: When Ethics are Challenged, 5

Structural Ice Control: A Review, 82

Uncertainty and Home Builders' Adoption of Technological Innovations, 179

Inorganic contaminants

Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439

Inspection

Guidelines for Inspection and Monitoring of In-Service Penstocks, 1574

Guidelines for Quarystone Armor Units, 194

Probing Pipelines (available only in Geoenvironmental Special Issue), 1428

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

Installation

Construction of the New Coleman Bridge: Fifth Roebing Lecture, 1997, 160

Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344

Drainage Culvert Installation by Jacking and Boring, 1398

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Microtunneling: An Owner's Perspective, 1391

Tension Control Bolts: Strength and Installation, 58

Installation costs

Defying Gravity, 1422

Institutions

The Case for a Technology Management Institute, 897

1998 ASCE TRANSACTIONS

Instrumentation

Apparatus for Streaming Potential Measurements on Granular Filter Media, 522

Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992

Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

Insulation

Investigation into Cause of Failure of 22 kV PILC Cable, 1007

Putting Polystyrene to Work, 1435

Insurance

Analysis of Safety Indicators in Construction, 177

Liability in Designing for Construction Worker Safety, 50

Intakes

Critical Submergence for Intakes in Still-Water Reservoir, 657

Estimation of Delta Profile in the Indravati Reservoir, 659

Sediment Control at Water Intakes Along Sand-Bed Rivers, 716

Integrals

Slope Reliability Analysis Using Generalized Method of Slices, 559

Integrated systems

Entity-Based Models for Computer-Aided Design Systems, 94

Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792

Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170

Integrated Modeling of Urban Shopping Activities, 1278

An Integrated Project Management System, 922

Integration of Bridge Management Systems and Non-destructive Evaluations, 832

Irrigation Planning: Integrated Approach, 1310

Kansas State University Architectural Engineering, 40

Spatial Liquefaction Analysis System, 96

Tomorrow's Civil Systems Engineer—The Master Integrator, 1017

Intellectual property

Staking Your Claim, 1479

Intelligent structures

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Intelligent transportation systems

I.T.S. On the Way, 1512

New Form of Road/Railway Transition Curves, 1264

New Model for Passing Sight Distance on Two-Lane Highways, 1263

Interaction models

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Interactions

Alum Residual Floc Interactions with an Advancing Ice/Water Interface, 403

Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226

SUBJECT INDEX

- Capacity of Thin-Walled I-Section Beam-Columns, 1063
- Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072
- Deflection of Steel-Concrete Composite Beams with Partial Shear Interaction, 1149
- Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354
- Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380
- Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965
- Lateral Flow Exchange in Transient Compound Channel Flow, 650
- Linking Hydrodynamic and Water Quality Models with Different Scales, 419
- Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
- Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421
- Wave Interactions with Vertical Slotted Barrier, 1337
- Interface shear**
- Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255
- Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254
- Interfaces**
- Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527
- Fracture Behavior of Geosynthetic Interlayers in Road Pavements, 1255
- Interface Behavior in Steel Fiber/Cement Composites under Tension, 332
- Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
- Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236
- Plastic-Damage Model for Interfaces in Cementitious Materials, 302
- Slope Stability of Geosynthetic Clay Liner Test Plots, 584
- Solutions of Multilayer Inclusion Problems Under Uniform Field, 231
- Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173
- Stress Distribution at PTFE Interface in Cylindrical Bearing, 77
- Interferometry**
- Interface Behavior in Steel Fiber/Cement Composites under Tension, 332
- Internal friction**
- Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567
- Internal pressure**
- Flexural Capacity of Pressurized Steel Pipe, 1061
- Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288
- Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325
- International compacts**
- Developing Standards and International Standards Organizations, 932

Irrigation

- International development**
- Deep Mixing Method: A Global Perspective, 1529
- International factors**
- Challenges and Opportunities in Construction: A Construction Congress V Summary, 1402
- A Summary of Construction Congress V, 940
- Interpolation**
- Kriging of Lognormal Stochastic Field, 348
- Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508
- Intersections**
- Comparison of Alternate Signal Timing Policies, 1260
- Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224
- Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227
- Model for Sight Distance Analysis of Uncontrolled Intersections, 1215
- Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197
- Simulation Model for Analyzing SPUDI with Actuated Signals, 1250
- Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325
- Utilization of Double Left-Turn Lanes with Downstream Land Reductions, 1226
- Ion exchange**
- Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486
- Iron**
- Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280
- Iron**
- Fluidized Bed for Removing Iron and Acidity from Acid Mine Drainage, 459
- Ground Attack, 1406
- Reductive Dechlorination of DNAPL Trichloroethylene by Zero-Valent Iron, 1378
- Iron compounds**
- Decontamination of U-Rich Waters by Granular Iron, 377
- Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
- Iron ore**
- Properties of Red Mud Tailings Produced under Varying Process Conditions, 404
- Irrigation**
- Canal Control Algorithms Formulations, 854
- Classification of Canal Control Algorithms, 850
- Improved Proportional-Integral (PI) Logic for Canal Automation, 857
- Irrigated Cropping Optimization, 859
- Measuring Droplet Impact Energy with Piezoelectric Film, 878
- PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875
- Water Resources Engineering '98, 1609
- Water Resources in Egypt: Strategies for Next Century, 1315

Irrigation scheduling

Nonlinear Programming Model for Extensive Irrigation, 867

Irrigation systems

Cost Allocation for Multiuse Water Systems in Egypt, 876

Irrigation Planning: Integrated Approach, 1310

Nonlinear Programming Model for Extensive Irrigation, 867

Optimal Operation of South Indian Irrigation Systems, 1309

Irrigation water

Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785

Isolators

Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284

Isotherms

New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510

Overall Adsorption Isotherm of Natural Organic Matter, 506

Isotropic material

Elastic Subsurface Stress Analysis for Circular Foundations. II, 275

Iteration

Formula for Calculating Critical Depth of Trapezoidal Open Channel, 653

Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768

Jacking

Drainage Culvert Installation by Jacking and Boring, 1398

Tough Conditions, Innovative Solutions, 1438

Japan

Construction Robots: The Search for New Building Technology in Japan, 1555

Record Spans in Japan, 1420

Jet grouting

Jet Grouting: New Directions, 1484

Jets

Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381

Double-Leaf Gate for Energy Dissipation below Regulators, 778

Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782

Jet Scour in Equilibrium Phase, 697

Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet, 767

Transport of Dry Aerosols in Turbulent Jets, 494

Jetties

Wave Propagation in Circular Jetted Channels, 1322

Job analysis

Time Management for Engineers and Constructors, 1600

Joints

Drywall Joint Finishing: Productivity and Ergonomics, 181

Effects of Construction Joint in Mass Flowable Concrete, 955

Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236

Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068

Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035

Investigation of Joint Spalling on a Concrete Runway, 989

Joint Spalling in Newly Constructed Concrete Pavements, 1004

Plastic-Damage Model for Interfaces in Cementitious Materials, 302

Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028

Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173

Joists

FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145

Kalman filter

Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812

PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875

Thermal Ice Growth: Real-Time Estimation, 81

Two-Step Identification Approach for Damped Finite Element Models, 287

Kaolin

Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540

Kinematic wave theory

Streamline Upwind Finite-Element Method for Overland Flow, 689

Kinematics

Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290

Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Wave Phase Shift at Coastal Structures, 1334

Kinetics

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376

Comparative Kinetics of Bacterial Reduction of Chromium, 424

Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475

Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455

Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456

Metal Ion Leaching from Contaminated Soils: Model Development, 407

Modeling Water Treatment Chemical Disinfection Kinetics, 469

SUBJECT INDEX

- Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470
- Knowledge-based systems**
- Concrete Bridge Management: From Design to Maintenance, 1393
- Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170
- Kriging**
- Kriging of Lognormal Stochastic Field, 348
- Labor**
- Construction Labor Productivity Modeling with Neural Networks, 198
- Factors of Non Excusable Delays That Influence Contractors' Performance, 923
- Irrigated Cropping Optimization, 859
- Multiskilled Labor Utilization Strategies in Construction, 196
- Laboratory tests**
- Aeration Performance of Low Drop Weirs, 648
- Dynamic Properties of Sherman Island Peat, 524
- Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735
- Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
- Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960
- Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214
- Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257
- Laboratory Study of Beach Nourishment Behavior, 1349
- Laboratory Study of Soil Flushing by Aqueous Solutions, 617
- Laboratory Tests of Bolted Diaphragm-Girder Connections, 63
- Laboratory Tests of Cable-Based Roof Moisture Detection System, 54
- Leaching Effects on the Properties of Cemented Sands in Kuwait, 618
- Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461
- Permeability of Lime-Treated Lateritic Soil, 1256
- Prediction of Freezing and Thawing Durability of Concrete Paving Blocks, 957
- Scale Effect in Pier-Scour Experiments, 723
- Shear Modulus and Damping Relationships for Gravels, 563
- Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421
- Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418
- System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408
- Three-Dimensional Numerical Model for Flow through Natural Rivers, 642
- Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6
- Wave Interactions with Vertical Slotted Barrier, 1337
- Lakes**
- Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284

Land usage planning

- Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400
- Laminar flow**
- Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707
- Threshold Between Smooth and Wavy Laminar Sheet Flow, 253
- Laminated wood**
- Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965
- Laminates**
- Applications of FEM on Free and Forced Vibration of Laminated Shells, 204
- Behavior and Strength of Laminated Glass, 210
- Blast Loads Versus Point Loads: The Missing Factor, 237
- Dynamic Instability of Laminates Subjected to Temperature Field, 347
- Low Velocity Impact Resistance of Laminated Architectural Glass, 37
- Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
- Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Land application**
- Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394
- Land development**
- Decision Support System for Residential Land Development Site Selection Process, 52
- Statewide Standardization of Site Improvement Standards, 1279
- Land management**
- Getting the GIST of Costs, 1478
- Land reclamation**
- Brownfields by the Book, 1520
- Land treatment**
- Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516
- Land usage**
- Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245
- Higher Ground, 1501
- Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802
- Stochastic Approach to Delineating Wellhead Protection Areas, 1302
- Transportation, Land Use, and Air Quality: Making the Connection, 1602
- Land usage planning**
- Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245
- Benefits from Including Wetland Component in Water Supply Projects, 1305
- Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291
- Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272
- New Methodology for Calibrating the Lowry Model, 1276

Landfills

- Air Flow as Monitoring Technique for Landfill Liners, 437
- Alternative Landfill Covers Pass the Test, 1496
- Alternative Use of Multimed Model for Subtitle D Landfill Applications, 1386
- Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319
- BEM Solution for Design of Trenches in Multilayered Landfills, 382
- Cyclic Characterization of Oil Landfill Solid Waste, 544
- Decomposition of Specific Materials Buried within Sanitary Landfills, 518
- Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382
- Dynamic Properties of Solid Waste Based on Back-Analysis of Oil Landfill, 545
- Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621
- Earthquake-Induced Displacements of Solid-Waste Landfills, 548
- Estimation of Municipal Solid Waste Landfill Settlement, 525
- Fly Ash Binders in the Stabilization of FGD Wastes, 380
- Full-Scale Leachate Treatment Using New Evaporation Technology, 1371
- Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414
- Identification of Dynamic Properties of Oil Landfill, 543
- Materials Balance for Municipal Solid-Waste Management, 383
- Mathematical Model for Methane Production from a Landfill Bioreactor, 462
- Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467
- A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502
- Photochemical Destruction of Cyanide in Landfill Leachate, 507
- Quarry Conversion, 1502
- Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363
- Stretching a Landfill, 1486
- Unsaturated Hydraulic Conductivity of Two Compact-Barrier Soils, 6

Landslides

- Extending the Period of Data Retrieval for Vertical Inclinomeres, 569
- Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534
- Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338

Laplace transform

- In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308
- Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616

Lateral forces

- Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637

- Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

Lateral loads

- Alaska's Last Link, 1536
- Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620
- FE Model of Steel Plate Shear Wall, 1038
- Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992
- Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577
- Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Lateral Load Behavior of Full-Scale Pile Group in Clay, 570
- Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554
- Overlooked Assumption in Nonconstrained Post Embedment, 1387

Laterals

- Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891
- Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220

Laterites

- Permeability of Lime-Treated Lateritic Soil, 1256

Lattice design

- Behavior of Cross-Bracing in Latticed Towers, 1064
- Design of Latticed Steel Transmission Structures, 1559
- Latticed Mast Structures, 1047

Launching

- Role of Launch Vehicles in Moon-Mars Exploration Program, 32

Laws

- Staking Your Claim, 1479

Layered soils

- High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370
- Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554
- Solutions of Unsaturated Seepage Problem by Power-Series Method, 813
- Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814

Layered systems

- Analysis of a Layered Viscoelastic System with Transient Temperatures, 233
- Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Finite-Element Analyses of Flexible Pavements, 1258
- General Formulation for Multilayered Pavement Systems, 1204
- Guided Waves in Multilayered Plates for Internal Defect Detection, 246
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821
- Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203
- Nonlinear Temperature Effects on Multilayered Concrete Pavements, 1211

SUBJECT INDEX

Light rail transit

- Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254
- Semianalytical Solution to Richards' Equation for Layered Porous Media, 890
- Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362

Layout

- Site-Level Facilities Layout Using Genetic Algorithms, 110

Leachates

- Alternative Use of Multimed Model for Subtitle D Landfill Applications, 1386
- Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319
- Fly Ash Binders in the Stabilization of FGD Wastes, 380
- Full-Scale Leachate Treatment Using New Evaporation Technology, 1371
- Photochemical Destruction of Cyanide in Landfill Leachate, 507
- Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363

Leaching

- Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472
- Improved Water Quality through Water Table Management in Eastern Canada, 866
- Influence of Carbonation on Leaching of Cementitious Wasteforms, 426
- Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383
- Leaching Effects on the Properties of Cemented Sands in Kuwait, 618
- Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512
- Metal Ion Leaching from Contaminated Soils: Model Development, 407
- Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467

Lead

- Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450
- Washing of Various Lead Compounds from a Contaminated Soil Column, 503

Leadership

- Aspiring to and Preparing for Engineering Firm Ownership, 913

Leakage

- Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779

Leaning structures

- Leaning-Structure Statics—Flying Buttresses and Mayan Vault Ceilings, 45

Least squares method

- Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817
- Runoff Forecasting Using RBF Networks with OLS Algorithm, 815
- Two-Step Identification Approach for Damped Finite Element Models, 287

Left-turns

- Modified Delay Equations for Permitted Left Turns, 1241
- Utilization of Double Left-Turn Lanes with Downstream Land Reductions, 1226

Legal factors

- Design-Build Solutions, 948
- Identity Crisis, 1462
- Staking Your Claim, 1479

Legislation

- A Corps Chief Looks at "Rising Tide", 1418

Levees

- Case Study of Slope Failures at Spillmans Island, 626
- Input-Output Economic Evaluation of System of Levees, 1306
- Overtopping Reliability Models for River Levee, 786

Liability

- Liability in Designing for Construction Worker Safety, 50
- Site Safety: Rights, Risks, and Responsibilities, 1455

Liability insurance

- Environmental Exposure, 1497

Life cycle cost

- Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270
- Cost Optimization of Concrete Structures, 1088
- Disposal Costs for Environmentally Regulated Facilities: LCC Approach, 157
- Framework for Modeling Durability Cost of Structural Systems, 842

- Optimization Modeling for Sewer Network Management, 187

Life cycles

- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Factors That Affect Process Quality in the Life Cycle of Building Projects, 163
- Pounding the Pavement, 1525
- Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840

Lifeline systems

- Guide to Post-Earthquake Investigation of Lifelines, 1572

Lift

- Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17
- Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346
- Pickup Probability for Sediment Entrainment, 675

Lift slab construction

- Reliability of Energy Method to Predict Lift Slab Structures Stability, 1006

Lifting

- Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Light rail transit

- Contaminated Soil Management at Construction Sites, 1376
- Light Rail as Planned, 1442

Riding the Rail, 1509

Lime

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971

A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502

Lime soil mixtures

Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214

Permeability of Lime-Treated Lateritic Soil, 1256

Limit analysis

Leaning-Structure Statics—Flying Buttresses and Mayan Vault Ceilings, 45

Limit Analysis Versus Limit Equilibrium for Slope Stability, 523

Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325

Structural Concrete: Cracked Membrane Model, 1178

System Reliability Evaluation of Ductile Frame Structures, 1099

Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550

Limit equilibrium

Limit Analysis Versus Limit Equilibrium for Slope Stability, 523

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Limit states

Actions for Verification of RC Structures with FRP Bars, 132

Classification System for Rigid and Semirigid Connections, 1106

Combining Snow and Earthquake Loads for Limit States Design, 10

Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

New Ductile Hybrid FRP Reinforced Bar for Concrete Structures, 117

Line of balance

Scheduling Projects with Repeating Activities, 172

Linear analysis

Bridge Flutter Derivatives at Vortex Lock-In, 1074

Linear programming

Irrigation Planning: Integrated Approach, 1310

Resource Leveling of Linear Schedules Using Integer Linear Programming, 168

Water-Resources Optimization Model for Santa Barbara, California, 1308

Linear systems

Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291

Linear Scheduling Model: Development of Controlling Activity Path, 171

Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238

Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345

Linearity

Analysis of Linear and Monoclinal River Wave Solutions, 734

Liners

Air Flow as Monitoring Technique for Landfill Liners, 437

Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319

Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621

Failure of Cyanide Overflow Pond Dam, 988

Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Stretching a Landfill, 1486

Liquefaction

Assessment of Liquefaction Potential Using Optimum Seeking Method, 593

Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637

Foundation Liquefaction Countermeasures for Earth Embankments, 573

Geotechnical Earthquake Engineering and Soil Dynamics III, 1570

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619

Spatial Liquefaction Analysis System, 96

Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Liquids

Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225

Keeping Tabs on Two Tunnels (available in Geoenvironmental Special Issue only), 1468

Litigation

Construction Congress Keynote Address, 941

Live loads

Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298

Elastic Analysis of Buried Pipes under Surface Patch Loadings, 591

Stochastic Analysis of Load Combination, 320

Load and resistance factor design

Design Guidelines for Longitudinal Plate to HSS Connections, 1110

Using a Programmable Calculator to Find ϕV_n for Steel Beams, 1395

Load combinations

Combining Snow and Earthquake Loads for Limit States Design, 10

Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338

Stochastic Analysis of Load Combination, 320

Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Undrained Limit Analyses for Combined Loading of Strip Footings on Clay, 550

SUBJECT INDEX

Load distribution

- Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68
- Pavement Strain from Moving Dynamic 3D Load Distribution, 1265
- Securing the Stone, 1412
- Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62
- Should Grouted Anchors Have Short Tendon Bond Length?, 535

Load factors

- Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176

Load tests

- Axial Capacity of Offshore Piles in Dense North Sea Sands, 541
- Axial Fatigue Performance of Cold-Formed Steel Sections, 1041
- Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64
- Interpretation of Plate Load Tests on Residual Soil Site, 605
- Lateral Load Behavior of Full-Scale Pile Group in Clay, 570
- Proofload Testing of Deteriorated Steel Girder Bridges, 66
- Service Load Response of Masonry Arch Bridges, 1026
- Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140
- Should Grouted Anchors Have Short Tendon Bond Length?, 535
- Strength of Webs Subjected to Compressive Edge Loading, 9
- Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124

Load tests, foundations

- Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Load transfer

- PCC Airfield Pavement Response During Thaw-Weakening Periods, 87
- Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585
- Transmission of Interior Concrete Column Loads through Floors, 1091

Loading

- Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532
- Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234
- Thermal Analysis of Reinforced-Concrete Shells, 1036

Loading rate

- Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474
- Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354

Loads

- Design of Trusses under Uncertain Loads Using Convex Models, 1060
- Dynamic Instability of Tires Under Asymmetric Loads, 20

Machine foundations

- Evaluation of Existing RC Slab Bridges, 990
- Finite-Element Analyses of Flexible Pavements, 1258
- Investigating the Adequacy of Vertical Design Loads for Shoring, 993
- Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533
- Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094
- Moving Loads on a Plate on Elastic Foundation, 329
- Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282
- Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283
- Simulation of Ringing in Offshore Systems under Viscoelastic Loads, 280
- Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325
- Stress Distribution at PTFE Interface in Cylindrical Bearing, 77

Local governments

- Czech It Out (Available only in Structural Engineering Special Issue), 1449
- Techniques for Administrative Creativity in Local Government, 895

Localization

- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Drought Contingency Planning: Evaluating the Effectiveness of Plans, 1307
- Local Scour at Piled Bridge Foundations, 698
- Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357
- Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243
- Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- A Unique Critical State for Sand?, 630

Location

- Averting Excavation Disaster, 898
- Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244
- Higher Ground, 1501
- Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287

Locks

- Inland Navigation: Locks, Dams, and Channels, 1578
- Integrated Control for Series of Waterway Locks, 1346

Logic programming languages

- Recursive Formulation of Force Method Programmed in Logic, 93

Long waves

- Numerical Modeling of Tidal Wave Runup, 1342
- Spectral Modeling of Nonlinear Dispersive Waves, 641

Low-rise buildings

- Design Guide for Partially Restrained Composite Connections, 1144

Machine foundations

- Vibration Isolation of Machine Foundations by Periodic Trenches, 259

Magnetic field effects

Magnetic field effects

Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513

Maintenance

Artificial Neural Network Approach for Pavement Maintenance, 113

Cost Allocation for Multiuse Water Systems in Egypt, 876

Pipelines in the Constructed Environment, 1586

Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843

Urban Subsurface Drainage, 1605

Maintenance costs

Maintenance of Municipal Infrastructure, 844

Management

Aspiring to and Preparing for Engineering Firm Ownership, 913

The Case for a Technology Management Institute, 897

Conflict Management Diagnosis at Project Management Organizations, 937

Consequences of Construction Conflict: A Hong Kong Perspective, 926

Dave's Top Ten Signals You Might Need a Better Management Approach, 899

Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427

Making the Transition from Engineer to Entrepreneur, 914

Marketing is Everyone's Job, 1527

Maximizing CEO Performance, 927

On-Call Contracting Strategy and Management, 930

Shielding Production: Essential Step in Production Control, 140

A Stockholder's Story, 1425

Time Management for Engineers and Constructors, 1600

Management methods

Dave's Top Ten Signals You Might Need a Better Management Approach, 899

The Need to Learn and Why Engineers May Be Poor Students, 912

Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381

Time Management for Engineers and Constructors, 1600

Management planning

Discovering Your Niche, 1537

Marketing is Everyone's Job, 1527

Management systems

Concrete Bridge Management: From Design to Maintenance, 1393

Dave's Top Ten Signals You Might Need a Better Management Approach, 899

Integration of Bridge Management Systems and Non-destructive Evaluations, 832

Management training

The Case for a Technology Management Institute, 897

Executive Fellowship Program: Lessons for Engineers, 918

TQM Implementation in State Departments of Transportation: View from the Firing Line, 902

1998 ASCE TRANSACTIONS

Managers

Conflict Management Diagnosis at Project Management Organizations, 937

Maximizing CEO Performance, 927

Manufacturing

Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416

Marine clays

Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594

Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577

Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613

Marine terminals

Ports '98, 1587

Marketing

Discovering Your Niche, 1537

Marketing is Everyone's Job, 1527

Pulling Ahead, 1503

Markov chains

Safety Estimation Method for Structures with Cumulative Damage, 351

Markov process

Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311

Marshes

Wetland Wonder, 1535

Masonry

Continuum Model for Masonry: Parameter Estimation and Validation, 1095

Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055

Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124

Mass transfer

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521

Flux Chamber Measurements of Mass Transfer Rates, 387

Influence of Water Content on SVE in a Silt Loam Soil, 500

NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477

Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501

Mass transport

Effects of Infiltration on Agricultural Runoff Contamination, 478

Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729

Massachusetts

Tough Conditions, Innovative Solutions, 1438

SUBJECT INDEX

Materials

Factors of Non Excusable Delays That Influence Contractors' Performance, 923

Materials, properties

Material Properties of Self-Flowing Concrete, 982

Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170

Materials testing

Comparative Study of Durability Indices for Clay Bricks, 39

Energy-Storing Wallboard: Flammability Tests, 963

Four-Stage Model for Predicting Creep Behavior, 219

A New Method for Studying Stress-Induced Microcracks in Concrete, 968

Permeability and Sorption Properties of Mature Near-Surface Concrete, 953

Materials tests

Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958

Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55

Stretching a Landfill, 1486

Mathematical models

Application of Wavelet Theory for Crack Identification in Structures, 224

Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367

Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168

Estuarine and Coastal Modeling, 1564

Materials Balance for Municipal Solid-Waste Management, 383

Mathematical Model for Methane Production from a Landfill Bioreactor, 462

Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516

Models of Storm Sewers Discharge: 1. Description, 445

Models of Storm Sewers Discharge: 2. Calibration and Verification, 446

One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141

Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729

Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Mathematical programming

Optimal Allocation of Water Withdrawals in River Basin, 1320

Matrix methods

Calculating Weight Matrix of Neural Network for Resource Leveling, 112

Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125

Deflections of Composite Beams with Web Openings, 1147

Measurement

ADV Measurements of Turbulence: Can We Improve Their Interpretation?, 721

A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827

Does Filtration Efficiency Affect Measurements of Particle Chemical Composition?, 454

Error Analysis of Flow Meter Measurements, 883

Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479

Flux Chamber Measurements of Mass Transfer Rates, 387

Not Your Father's Strain Gauge, 1480

Soil Hydraulic Models Selection Based on In-Situ Measurements, 889

Viability of Remote Sensing on Two-Lane Roads, 1198

Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Measuring instruments

Error Analysis of Flow Meter Measurements, 883

Extending the Period of Data Retrieval for Vertical Inclinometers, 569

Mechanical properties

Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527

High-Performance Powder, 1407

Material Properties of Self-Flowing Concrete, 982

Mechanical Properties of Low-Yield Point Steels, 970

Mechanics of Granular Materials at Low Effective Stresses, 25

Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971

Review of Mechanical Properties of HSC at Elevated Temperature, 959

Through-Thickness Properties of Structural Steels, 1104

Mechanics

Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403

Mediation

Winning ADR Battles, 934

Membrane processes

Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406

Membrane reinforcement

Hyperbolic Cooling Towers with Bulge Imperfections, 359

Membranes

Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027

Chloride Transport in Concrete Subjected to Electric Field, 979

Flexible Dual Membrane Wave Barrier, 1353

In-Stream Hollow-Fiber Membrane Aeration, 715

The Membrane Treatment, 1494

NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076

Membranes

Membranes

Shape of Deployable Membrane Reflectors, 26
Stresses and Crack Angles in Concrete Membrane Elements, 1179

Surfactants for Separation Processes: Enhanced Ultrafiltration, 458

Memoirs of deceased members

Caffey, Ben, 1612
Capacete, José Luis, 1613
James, II, Robert L., 1614
Lavery, Finley Burnap, 1615
McElrath, Jr., Henry Patton, 1616
Mitchell, John Kenneth, 1617
Swiger, William F., 1618

Mercury

Mercury Disposal Via Sulfur Reactions, 488

Mergers

A Merger Manual, 1424
The New Environment for Consolidation, 1514

Metal finishing

Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487

Metals

Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487
Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450
General Creep-Time Equation, 966
Generation of Long-Term Record of Contaminant Transport, 448
Influence of Carbonation on Leaching of Cementitious Wasteforms, 426
Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455
Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456
Metal Ion Leaching from Contaminated Soils: Model Development, 407
Not Your Father's Strain Gauge, 1480
Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15
Stress Distribution at PTFE Interface in Cylindrical Bearing, 77
Washing of Various Lead Compounds from a Contaminated Soil Column, 503

Methane

Multi-Fed Upflow Anaerobic Filter: Development and Features, 517
Nothing Wasted, 1465
Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Methane generation

Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414
Mathematical Model for Methane Production from a Landfill Bioreactor, 462

Methodology

Comparison of Delay Analysis Methodologies, 178
Concrete Bridge Demolition Methods and Equipment, 70
Contraction and Expansion Losses Through Bridge Constrictions, 710

1998 ASCE TRANSACTIONS

Energy Estimates for Discretization Errors in Water Hammer Problems, 692
Geophysical Exploration for Engineering and Environmental Investigations, 1568
Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162
Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870

Mexico

Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Micro piles

Soil Improvement for Big Digs, 1594

Microbes

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376
Derivation of Mean Cell Residence Time Formula, 428
Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
Growth Kinetics of Mixed Cultures under Chlorate-Reducing Conditions, 496

Microbial activity

Clearing the Air, Biologically, 1495
Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475
Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826
Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519
Three-Dimensional Model for Subsurface Transport and Biodegradation, 412
Toxicity of Acrylic Acid to Acetate-Enriched *Methanosarcina* Cultures, 413

Microstructure

Fractal Model for Flow Through Saturated Soils, 529
Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243
Solutions of Multilayer Inclusion Problems Under Uniform Field, 231

Microtunneling

Microtunneling: An Owner's Perspective, 1391

Middle East

Polymer Modification of Arab Asphalt, 972

Mineral analysis

Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984

Mines

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762
Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Mining

Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385

Minnesota

Casting Hot and Cold, 1439

Mirrors

Shape of Deployable Membrane Reflectors, 26

SUBJECT INDEX

Mississippi River

- A Corps Chief Looks at "Rising Tide", 1418
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592
- Structural Ice Control Alternatives for Middle Mississippi River, 91

Mixing

- Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381
- Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679
- Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
- Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644
- Longitudinal Dispersion on Ice-Covered Rivers, 90
- Mixing Behavior of Density-Stratified Pools, 680
- Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 735
- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Mixtures

- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974
- Modeling Concrete Strength with Augment-Neuron Networks, 985
- Polymer Modification of Arab Asphalt, 972

Modal analysis

- Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831
- Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079
- Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080
- Structural Identification: Analytical Aspects, 1114
- Two-Step Identification Approach for Damped Finite Element Models, 287
- Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78

Model accuracy

- Present Status of Second Order Closure Turbulence Models. II: Applications, 270
- Present Status of Second-Order Closure Turbulence Models. I: Overview, 269

Model analysis

- Present Status of Second-Order Closure Turbulence Models. I: Overview, 269
- Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129

Model studies

- Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410

Model tests

- Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533

Modeling

Model verification

- Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420
- Contraction and Expansion Losses Through Bridge Constrictions, 710
- Models of Storm Sewers Discharge: 2. Calibration and Verification, 446
- Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283
- Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774

Modeling

- Airport Modeling and Simulation, 1543
- Alternative Use of Multimed Model for Subtitle D Landfill Applications, 1386
- Analysis of Granular Bases Using Discrete Deformable Blocks, 1267
- Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284
- Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355
- Compound Open-Channel Flow Modeling with Nonlinear Low-Reynolds $k-\epsilon$ Models, 678
- Construction Labor Productivity Modeling with Neural Networks, 198
- Design for Hydraulic Geometry of Alluvial Channels, 702
- Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159
- Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298
- Equitable Traffic Assignment with Environmental Cost Functions, 1196
- Framework for Modeling Durability Cost of Structural Systems, 842
- The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385
- Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366
- High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370
- Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802
- Information Model for Managing Design Changes in a Collaborative Environment, 98
- Integrated Energy and Water Conservation Modeling, 199
- Integrated Modeling of Urban Shopping Activities, 1278
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820
- Kostiakov Infiltration Parameters from Kinematic Wave Model, 868
- Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227
- Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644
- Metal Ion Leaching from Contaminated Soils: Model Development, 407
- Model for Public Sector Design-Build Project Selection, 195

- Model of Concrete Confined by Fiber Composites, 1137
- Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467
- Modeling Concrete Strength with Augment-Neuron Networks, 985
- Modeling Helps in Understanding Policy Alternatives: A Case, 901
- Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798
- Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388
- Modeling Spatial Variability of Rainfall Over a Catchment, 806
- Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115
- Modeling the Heat Sense Flowmeter, 871
- Modeling the Nile Basin Under Climatic Change, 803
- Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 733
- Modeling Water Treatment Chemical Disinfection Kinetics, 469
- Multivariate Modeling of Flood Flows, 663
- Nonhydrostatic Model for Surface Irrigation, 877
- Particle Model for Simulating Flow Over Large Areas, 712
- Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397
- Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485
- Robust Reliability of Projects with Activity-Duration Uncertainty, 154
- Runoff Forecasting Using RBF Networks with OLS Algorithm, 815
- Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345
- Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843
- Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703
- Simplified Model of Low Cycle Fatigue for RC Frames, 1143
- Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879
- Spectral Modeling of Nonlinear Dispersive Waves, 641
- Speed-Flow Modeling of Arterial Roads in Singapore, 1223
- Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363
- Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409
- Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- Suitability of Selected Flow Equations and Variation of Manning's n in Furrow Irrigation, 862
- Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504
- Thermal Ice Growth: Real-Time Estimation, 81
- Tidal and Transport Modeling by Using Turbulence $k-\omega$ Model, 399
- Trends in BOD/DO Modeling for Wasteload Allocations, 495
- Use of Porosity in Models of Consolidation, 235
- Using Object-Communication for Design Standards Modeling, 105
- Wave Propagation in Circular Jettied Channels, 1322
- Weighted Implicit Finite-Volume Model for Overland Flow, 755
- ### Models
- Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432
- Bayesian Prediction of Elastic Modulus of Concrete, 1034
- Depth Probability Distributions in Stream Reaches, 673
- Design of Trusses under Uncertain Loads Using Convex Models, 1060
- Developing Small Area Network Planning Models Using Desktop GIS, 1275
- Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
- Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
- Entity-Based Models for Computer-Aided Design Systems, 94
- Erosion of Fluid Mud Layers. I: Entrainment Model, 8
- Evapotranspiration of Melaleuca Forest in South Florida, 807
- General Creep-Time Equation, 966
- Generation of Long-Term Record of Contaminant Transport, 448
- Genetic Algorithms for Calibrating Water Quality Models, 398
- Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782
- Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057
- Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456
- Initial Motion of Sediment in Oscillatory Flow, 1331
- Linking Hydrodynamic and Water Quality Models with Different Scales, 419
- Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512
- Method for Estimating Transition Probability in Bridge Deterioration Models, 833
- Model for Sight Distance Analysis of Uncontrolled Intersections, 1215
- Models of Construction Innovation, 167
- New Methodology for Calibrating the Lowry Model, 1276
- Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835
- Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
- Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423
- Present Status of Second Order Closure Turbulence Models. II: Applications, 270
- Present Status of Second-Order Closure Turbulence Models. I: Overview, 269
- A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212
- Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470
- Recent Approaches to Shear Design of Structural Concrete, 1172

SUBJECT INDEX

Moon

- Sampling Design Methods for Water Distribution Model Calibration, 1318
- Shielding Production: Essential Step in Production Control, 140
- Significance of Defects in Annular Well Seals, 1368
- Simplified Dynamic Reliability Models for Hydraulic Design, 687
- Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834
- Stochastic Approach to Delineating Wellhead Protection Areas, 1302
- Structural Concrete: Cracked Membrane Model, 1178
- Structural Identification: Analytical Aspects, 1114
- Updating Models and Their Uncertainties. Part II: Model Identifiability, 264
- Modulus of elasticity**
- Back-Calculation of Concrete Pavement Modulus Using Road-Rater Data, 1210
- Early Form Removal of Reinforced Concrete Slabs, 1390
- Effect of Transition Alone on Elastic Stresses in Concrete Materials, 987
- Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Tensile and Nondestructive Testing of FRP Bars, 116
- Moisture**
- Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339
- Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367
- Effects of Moisture on Pyrolysis of Polypropylene, 482
- Laboratory Tests of Cable-Based Roof Moisture Detection System, 54
- Moisture content**
- One-Sided Stress Wave Velocity Measurement in Concrete, 369
- Moments**
- Flexural Deformability of Reinforced Concrete Beams, 1139
- Overlooked Assumption in Nonconstrained Post Embedment, 1387
- Momentum transfer**
- Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774
- Monitoring**
- Air Flow as Monitoring Technique for Landfill Liners, 437
- Connecticut's Bridge Infrastructure Monitoring Program for Assessment, 837
- Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435
- Detecting Accidental Contaminations in Municipal Water Networks, 1301
- Determination of Heat Production Zones at Open-Cast Mine Dump, 451
- Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439
- Evaluation of Containment Systems Using Hydraulic Head Data, 443
- Guidelines for Inspection and Monitoring of In-Service Penstocks, 1574
- Interpreting Settlement Profiles of Earth Dams, 611
- Keeping Tabs on Two Tunnels (available in Geoenvironmental Special Issue only), 1468
- Laboratory Tests of Cable-Based Roof Moisture Detection System, 54
- Monitoring Biofilters Used for Air Pollution Control, 1370
- Monitoring Hydraulic Gradient Using Three-Point Estimator, 434
- Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526
- Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430
- Not Your Father's Strain Gauge, 1480
- Novel System for Automatic Pavement Distress Detection, 104
- Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433
- Representative Ground Water Monitoring in Fractured Porous Systems, 436
- Site Characterization and Containment Assessment with Dissolved Gases, 442
- Structural Identification: Analytical Aspects, 1114
- TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441
- Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629
- Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181
- Montana**
- Over the Top Concrete, 1414
- Monte Carlo method**
- Evaluating Health Risks From Ground-Water Contaminants, 429
- Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965
- Mean-Field Rainfall Bias Studies for WSR-88D, 809
- Optimization of Crew Configurations Using Activity-Based Costing, 159
- Orientation to Health Risk Assessment for Practicing Engineers, 1364
- Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423
- Predicting Frost Heave Using FROST Model with Centrifuge Models, 84
- Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823
- Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829
- Simulation of Stationary Non-Gaussian Translation Processes, 220
- Monuments**
- Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181
- Moon**
- Construction Engineering Approach for Lunar Base Development, 34
- Economic and Technical Issues for Lunar Development, 31
- Lunar Polar Ice: Implications for Lunar Development, 33
- Martian and Lunar Cold Region Soil Mechanics Considerations, 35
- Role of Launch Vehicles in Moon-Mars Exploration Program, 32

Moon

Role of Lunar Development in Human Exploration of the Solar System, 30

Mooring

Attitude Control of Space Platform Based Tethered Satellite System, 19

Moorings

Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266

Morphology

Morphological Study of Coarse Aggregates Using Image Analysis, 969

Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Mortars

Effect of GGBFS Particle-Size Distribution on Mortar Compressive Strength, 975

Mud

Erosion of Fluid Mud Layers. I: Entrainment Model, 8

Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

A Mechanism for the Formation of Lutoclines by Waves, 1340

Multimedia

The Civil Engineering Resource Library, 108

Multimedia for Construction Project Management: Project Navigator, 149

Virtual Environments and Water Quality Management, 830

Multiple objective analysis

Fuzzy Optimization Model for Water Quality Management of River System, 1290

Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296

Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295

Multicriteria Optimization for Design of Structures with Active Control, 22

Multiple purpose projects

Inviting Trouble Downstream, 1417

Reservoir Operation Studies of Sabarmati System, India, 1285

Multiple regression models

Predicting Longitudinal Dispersion Coefficient in Natural Streams, 643

Multistorey buildings

Cyclic Test of Four-Storey Steel Plate Shear Wall, 1037

Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077

FE Model of Steel Plate Shear Wall, 1038

Nonlinear Structural Control Using Neural Networks, 247

Numerical Studies on Recent Large High-Rise Buildings Fire, 44

Municipal engineering

Higher Ground, 1501

Municipal wastes

Design of Municipal Wastewater Treatment Plants, 1560

Effects of Moisture on Pyrolysis of Polypropylene, 482

1998 ASCE TRANSACTIONS

Estimation of Municipal Solid Waste Landfill Settlement, 525

Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414

Location of Recycling Depots with GIS, 1277

Mathematical Model for Methane Production from a Landfill Bioreactor, 462

Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973

Time Series Analysis of Municipal Solid Waste Generation Rates, 395

Municipal water

Detecting Accidental Contaminations in Municipal Water Networks, 1301

The Membrane Treatment, 1494

Nails

Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035

Natural frequency

Experimental Determination of Frequencies and Tension for Elastic Cables, 336

Navier-Stokes equations

Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341

Navigation

Ice-Tank Data on Brash-Ice Loads against Barges, 88

Inland Navigation: Locks, Dams, and Channels, 1578

Recent Progress in River Ice Engineering Research at CRREL, 86

Nearshore circulation

Estimating Wave Heights from Pressure Measured in Sand Bed, 1341

Longshore Sediment Flux in Water Column and Across Surf Zone, 1336

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Negotiations

Bidding Practices of Subcontractors in Colorado, 166

Computer-Supported Collaborative Negotiation Methodology, 97

Nets

Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076

Network analysis

Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219

Network design

Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Network reliability

Probabilistic Model for Water Distribution Reliability, 1304

Networks

Approaching OD Trip Volumes Based on Inverse T-V Equation, 1229

General Hydrodynamic Model for Sewer/Channel Network Systems, 683

SUBJECT INDEX

Neural networks

- Artificial Neural Network Approach for Pavement Maintenance, 113
 - Artificial Neural Networks for Civil Engineers: Advanced Features and Applications, 1546
 - Calculating Weight Matrix of Neural Network for Resource Leveling, 112
 - Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95
 - Construction Labor Productivity Modeling with Neural Networks, 198
 - General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635
 - Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs?, 1314
 - Modeling Concrete Strength with Augment-Neuron Networks, 985
 - Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115
 - Modular Neural Networks for Predicting Settlements During Tunneling, 562
 - Neural Network Approach to Classification of Traffic Flow States, 1261
 - Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
 - Nonlinear Structural Control Using Neural Networks, 247
 - Quantity Estimating of Building with Logarithm-Neuron Networks, 184
 - Regularization Neural Network for Construction Cost Estimation, 141
 - River Stage Forecasting Using Artificial Neural Networks, 794
 - Runoff Forecasting Using RBF Networks with OLS Algorithm, 815
 - Structural Damage Detection Using Artificial Neural Networks, 838
 - Use of Neural Networks in Design of Coastal Sewage Systems, 699
 - Virtual Flight Data Recorder for Commercial Aircraft, 18
- New Jersey**
- Challenges Met in Engineering Newark International Airport Structures, 1394
 - Statewide Standardization of Site Improvement Standards, 1279
- New York City**
- All Decked Out, 1466
- New York, State of**
- Losing Ground, 1443
- Newton-Raphson method**
- Gradually Varied Flow Solutions in Newton-Raphson Form, 881
- Nile River**
- Cost Allocation for Multiuse Water Systems in Egypt, 876
 - Modeling the Nile Basin Under Climatic Change, 803
- Nitrates**
- Improved Water Quality through Water Table Management in Eastern Canada, 866
 - Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380

Nondestructive tests

- Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516
- Nitrification**
- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402
- Nitrogen oxide**
- Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521
- Nitrogen removal**
- Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402
- Noise**
- Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293
 - Effects of Construction on Structures, 1561
 - Process Noise and Optimum Observation in Conditional Stochastic Fields, 366
- Noise control**
- Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245
- Noise measurement**
- Damage Identification Through Regularization Method I: Theory, 217
 - Damage Identification Through Regularization Method II: Applications, 218
- Noise reduction**
- Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245
 - Sampling Method for Cost Estimation of Highway Sound Barrier Infrastructure, 848
- Nonaqueous phase liquids**
- Bench-Scale Investigation on Vibrorrecovery of NAPL Ganglia from Sands, 483
 - Dealing with DNAPLs, 1521
 - Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392
 - Influence of Water Content on SVE in a Silt Loam Soil, 500
 - Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515
 - NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477
 - Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
 - Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
 - Reductive Dechlorination of DNAPL Trichloroethylene by Zero-Valent Iron, 1378
- Nondestructive measurement**
- Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255
- Nondestructive tests**
- Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213
 - Application of SASW Method Underwater, 575
 - Automated Inversion Procedure for Spectral Analysis of Surface Waves, 595
 - Cure for Thinning Concrete, 1532
 - Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55

Nondestructive tests

- Evaluation of Existing RC Slab Bridges, 990
- Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216
- Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257
- Guided Waves in Multilayered Plates for Internal Defect Detection, 246
- Impact of FWD Testing Variability on Pavement Evaluations, 1252
- Impulse Response Evaluation of Drilled Shafts, 615
- Integration of Bridge Management Systems and Nondestructive Evaluations, 832
- Investigating Performance of Bonded Concrete Overlays, 996
- Modeling of Subsurface Pulsed Radar for Nondestructive Testing of Structures, 976
- One-Sided Stress Wave Velocity Measurement in Concrete, 369
- Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
- Probing Pipelines (available only in Geoenvironmental Special Issue), 1428
- Proofload Testing of Deteriorated Steel Girder Bridges, 66
- Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000
- Tensile and Nondestructive Testing of FRP Bars, 116
- Ultrasonic Techniques to Characterize Pultruded Composite Members, 129
- Nonlinear analysis**
 - Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
 - Behavior of Nonlinearly Restrained Slender Bridge Piers, 71
 - Capacity of Masonry Arches and Spatial Frames, 1096
 - Compound Open-Channel Flow Modeling with Nonlinear Low-Reynolds $k-\epsilon$ Models, 678
 - Earthquake-Induced Displacements of Solid-Waste Landfills, 548
 - Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360
 - Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83
 - Four-Stage Model for Predicting Creep Behavior, 219
 - Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102
 - Nonlinear Analysis of Composite Beams with Deformable Shear Connectors, 1148
 - Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305
 - Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090
 - Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055
 - Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79
 - Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835
 - Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056
 - Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076
 - Reliability of Transmission Structures Including Nonlinear Effects, 1130
 - Short-Wave Behavior of Long-Wave Equations, 1350

1998 ASCE TRANSACTIONS

- Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051
- Nonlinear programming**
 - Nonlinear Programming Model for Extensive Irrigation, 867
- Nonlinear response**
 - Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331
 - Continuum Model for Masonry: Parameter Estimation and Validation, 1095
 - Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058
 - Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234
 - Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162
- Nonlinear systems**
 - Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298
 - Dynamics of Nonlinear Aeroelastic Systems, 24
 - Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206
 - Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266
 - Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290
 - Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335
 - Nonlinear Structural Control Using Neural Networks, 247
 - Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311
 - Spectral Identification of Nonlinear Structural Systems, 296
- Non-Newtonian fluids**
 - Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707
- Nonpoint pollution**
 - Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444
 - Characterization of Highway Runoff in Austin, Texas, Area, 389
 - Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300
 - Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479
 - Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15
 - Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385
 - Use of Regression Models for Analyzing Highway Stormwater Loads, 493
- Nonstructural elements**
 - Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574
- Nonuniformity**
 - Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717

SUBJECT INDEX

North Sea

Axial Capacity of Offshore Piles in Dense North Sea Sands, 541

Numerical analysis

- Analysis of Penetration Resistance of Concrete, 248
Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368
Bending Solution for Thick Plates with Quadrangular Boundary, 205
Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886
Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103
Estimating the Directional Spectrum of Waves Near a Reflector, 1359
Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735
Improved Finite-Analytic Methods for Steady-State Transport Problems, 690
An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326
Lagrangian/Eulerian Description of Dynamic System, 317
Numerical Studies on Recent Large High-Rise Buildings Fire, 44
Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283
Solution of Beam on Elastic Foundation by DQEM, 373
Space-Time Conservation Method Applied to Saint Venant Equations, 704
Streamline Upwind Finite-Element Method for Overland Flow, 689
- Numerical calculations**
Complex Notation in Flutter Analysis, 1131
Short-Wave Behavior of Long-Wave Equations, 1350
Slope Reliability Analysis Using Generalized Method of Slices, 559
- Numerical models**
Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319
Comparison of Coupled and Semicoupled Numerical Models for Alluvial Channels, 741
Damage Identification Through Regularization Method II: Applications, 218
Decision Support System for Conjunctive Stream-Aquifer Management, 1289
Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696
Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257
Lateral Flow Exchange in Transient Compound Channel Flow, 650
Marine Tailings Disposal Simulation, 691
Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515
Modeling Density and Turbulence in Stratified Tidal Medium, 662
Modeling of Subsurface Pulsed Radar for Nondestructive Testing of Structures, 976

Object-oriented languages

- Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090
Nonlinear Structural Control Using Neural Networks, 247
Numerical Gauge Approach to Water-Level Datum Determination, 685
Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661
Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332
Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753
Numerical Modeling of Tidal Wave Runup, 1342
Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728
Numerical Simulation of Gravity Current Front, 714
Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341
Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797
Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433
Predicting Frost Heave Using FROST Model with Centrifuge Models, 84
River Width Adjustment. II: Modeling, 752
Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565
Semianalytical Solution to Richards' Equation for Layered Porous Media, 890
Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345
Three-Dimensional Model for Subsurface Transport and Biodegradation, 412
Three-Dimensional Numerical Model for Flow through Natural Rivers, 642
Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870
Wave Interactions with Vertical Slotted Barrier, 1337
- Nutrient loading**
Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508
- Nutrients**
Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463
Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300
Eutrophication Model for a Coastal Bay in Hong Kong, 449
Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557
- Objectives**
Partnering Continuum, 939
- Object-oriented languages**
Control Improvement for Advanced Construction Equipment, 174
Hybrid Environment for Standards Processing, 107
Modeling and Analysis of Aggregate Production Operations, 186
Using Object-Communication for Design Standards Modeling, 105

Occupational safety

Occupational safety

Analysis of Safety Indicators in Construction, 177

Occupational Safety and Health Administration

Identifying Root Causes of Construction Injuries, 147

Ocean engineering

California and the World Ocean '97, 1549

Ocean Wave Measurement and Analysis, 1583

Ocean environments

Application of SASW Method Underwater, 575

California and the World Ocean '97, 1549

Ocean resources

California and the World Ocean '97, 1549

Ocean waves

Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Offshore platforms

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290

Reliability Characteristics of a Platform in the Mississippi River Delta, 592

Offshore structures

Axial Capacity of Offshore Piles in Dense North Sea Sands, 541

Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068

Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Simulation of Ringing in Offshore Systems under Viscous Loads, 280

State of Restored Practice Review in FRP Composite Piling, 127

Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Oil spills

Oil in the Soil, 1523

Oils

Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374

Role of Geophysics in Expedited Site Characterization: Case History, 1365

Oklahoma

The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002

The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003

One dimensional flow

Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745

Space-Time Conservation Method Applied to Saint Venant Equations, 704

Open channel flow

Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894

Compound Open-Channel Flow Modeling with Nonlinear Low-Reynolds $k-\epsilon$ Models, 678

Effect of Bed-Load Movement on Flow Friction Factor, 665

End Depth in Circular Channels, 748

Engelund's Analysis of Turbulent Energy and Suspended Load, 268

Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654

Experiments on Saltation of Sand in Water, 764

Flow Around Bridge Piers, 681

Fluid Mechanics: An Interactive Text, 1567

Free Surface Flow over Permeable Wavy Bed, 757

Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696

Gradually Varied Flow Solutions in Newton-Raphson Form, 881

Hydraulics of Open Channel Flow, 1575

Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644

Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 733

Modified Logarithmic Law for Velocity Distribution Subjected to Upward Seepage, 787

Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768

Space-Time Conservation Method Applied to Saint Venant Equations, 704

Subcritical Open-Channel Junction Flow, 747

Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656

Variational Problem of Water-Level Stabilization in Open Channels, 646

Open channels

Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777

Boundary Shear in Rectangular Ducts and Channels, 652

Burgers' Equation Model for Unsteady Flow in Open Channels, 705

Drift Velocity Concept for Sediment-Laden Flows, 765

Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771

Flow at a 90° Equal-Width Open-Channel Junction, 668

Formula for Calculating Critical Depth of Trapezoidal Open Channel, 653

General Hydrodynamic Model for Sewer/Channel Network Systems, 683

Head-Discharge Relationship in Flumes of Compound Sections, 874

Hydraulics of Open Channel Flow, 1575

Nondimensional Expression of Unsteady Canal Flow, 858

Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664

Open loop control systems

Open-Close Loop Active Control of Articulated Leg Platform, 297

Open pit mining

Determination of Heat Production Zones at Open-Cast Mine Dump, 451

Openings

Deflections of Composite Beams with Web Openings, 1147

Design of Wood Diaphragm with Openings, 1116

Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285

SUBJECT INDEX

- Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122
- Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062
- Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- Specifications for Structural Steel Beams with Web Openings, 1597
- Operation**
- Cost Allocation for Multiuse Water Systems in Egypt, 876
- Optical fibers**
- Optically Powered Electrical Accelerometer and Its Field Testing, 271
- Optimal control methods**
- Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295
- Computational Issues for Optimal In-Situ Bioremediation Design, 1286
- Control Improvement for Advanced Construction Equipment, 174
- Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297
- Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779
- PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875
- Optimal design**
- Design of Pipelines to Transport Neutrally Buoyant Capsules, 780
- Design of Trusses under Uncertain Loads Using Convex Models, 1060
- Guide to Structural Optimization, 2
- Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374
- Optimal Design of Public Bus Service with Demand Equilibrium, 1251
- Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086
- Optimum Design of Absorber for MDOF Structures, 1161
- Optimal use**
- Multiskilled Labor Utilization Strategies in Construction, 196
- Optimization**
- Application of Automatic Differentiation to Reservoir Design Models, 1298
- Assessment of Liquefaction Potential Using Optimum Seeking Method, 593
- Calculating Weight Matrix of Neural Network for Resource Leveling, 112
- Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Colebrook-White Formula for Pipe Flows, 655
- Computational Issues for Optimal In-Situ Bioremediation Design, 1286
- Continuum Topology Optimization for Concept Design of Frame Bracing Systems, 1085
- Cost Optimization of Concrete Structures, 1088
- Discrete-Time Dynamic User-Optimal Departure Time/Route Choice Model, 1228
- Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297

Optimization models

- Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288
- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Evolution of Optimum Shapes Using Genetic Algorithm, 1167
- Evolutionary Algorithm for Minimization of Pumping Cost, 111
- Guide to Structural Optimization, 2
- Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296
- Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779
- Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287
- Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295
- Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516
- Modeling Concrete Strength with Augment-Neuron Networks, 985
- Multicriteria Optimization for Design of Structures with Active Control, 22
- Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
- Optimal Allocation of Water Withdrawals in River Basin, 1320
- Optimal Operation of South Indian Irrigation Systems, 1309
- Optimal Performance of Civil Infrastructure Systems, 1584
- Optimization of Crew Configurations Using Activity-Based Costing, 159
- Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27
- Presence of Nonconvexity in Groundwater Concentration Response Function, 1282
- Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126
- Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166
- Slope Reliability Analysis Using Generalized Method of Slices, 559
- Spatial Liquefaction Analysis System, 96
- Structural Identification: Analytical Aspects, 1114
- Three-Arc Vertical Curve for Constrained Highway Alignments, 1216
- Traffic and Transportation Studies, 1601
- Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263
- Variational Problem of Water-Level Stabilization in Open Channels, 646
- Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170
- Optimization models**
- Cost-Effectiveness Analyses of Libya's Water Supply System, 1316
- Fuzzy Optimization Model for Water Quality Management of River System, 1290
- Guide to Structural Optimization, 2
- Irrigated Cropping Optimization, 859

Optimization models

- Irrigation Planning: Integrated Approach, 1310
Mixed-Integer Chance-Constrained Models for Ground-Water Remediation, 1312
Nonlinear Programming Model for Extensive Irrigation, 867
Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292
Optimization Modeling for Sewer Network Management, 187
Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283
Water-Resources Optimization Model for Santa Barbara, California, 1308

Organic chemicals

- Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

Organic compounds

- Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557

Organic matter

- Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Flocs, 471
Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425
Laboratory Study of Soil Flushing by Aqueous Solutions, 617
Mathematical Model for Methane Production from a Landfill Bioreactor, 462
NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505
Nothing Wasted, 1465
Overall Adsorption Isotherm of Natural Organic Matter, 506
Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80
Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418
Organizational policy
Discovering Your Niche, 1537
Interactions Between Construction Planning and Influence Factors, 169
The Need to Learn and Why Engineers May Be Poor Students, 912

Organizations

- Conflict Management Diagnosis at Project Management Organizations, 937
The Need to Learn and Why Engineers May Be Poor Students, 912
Partnering Continuum, 939

Orthotropic

- Continuum Model for Masonry: Parameter Estimation and Validation, 1095
Layerwise Composite Plate Analysis Using an Element Template Methodology, 281
Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16

Orthotropic models

- Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058

1998 ASCE TRANSACTIONS

Oscillations

- Oscillating Tidal Barriers and Random Waves, 694

Oscillators

- Residual Displacement Response Spectrum and Its Application, 1083

Oscillatory flow

- Effects of Sediment Transport on Bed Friction and Turbulence, 1343
Initial Motion of Sediment in Oscillatory Flow, 1331
Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201

Outfall sewers

- Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381
Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679
Hydraulics of "Duckbill" Elastomer Check Valves, 693
Initial Dilution Equations for Buoyancy-Dominated Jets in Current, 658
Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390
Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713

Outflows

- Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891

Overburden

- Factors Affecting Contractors' Risk of Cost Overburden, 904

Overconsolidated clays

- Observed Performance of Multiroped Excavation in Stiff Clay, 608
Slope Stability Analyses in Stiff Fissured Clays, 14

Overflow

- Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738
Hydraulics of Embankment Weirs, 758
Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872
Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480
Residence Time of Freshwater in Boston's Inner Harbor, 1333
Urban Wet-Weather Flow Management: Research Directions, 1299
Use of Neural Networks in Design of Coastal Sewage Systems, 699

Overland flow

- DEM Based Overland Flow Routing Model, 791
Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861
Effects of Infiltration on Agricultural Runoff Contamination, 478
Nonhydrostatic Model for Surface Irrigation, 877
Performance Comparison of Overland Flow Algorithms, 688
Streamline Upwind Finite-Element Method for Overland Flow, 689
Suitability of Selected Flow Equations and Variation of Manning's n in Furrow Irrigation, 862
Weighted Implicit Finite-Volume Model for Overland Flow, 755

SUBJECT INDEX

Overtopping

- Coastal Flood Risk Assessment, 1348
- Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332
- Overtopping Reliability Models for River Levee, 786
- Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671

Owners

- Aspiring to and Preparing for Engineering Firm Ownership, 913
- Lessons from an Outpatient Surgery Center, 46
- Making the Transition from Engineer to Entrepreneur, 914
- Weighing the Options, 950

Oxidation

- Advanced Oxidation Processes for Degradation of 2,4-Dichloro- and 2,4-Dimethylphenol, 457
- Antioxidant Depletion Lifetime in High Density Polyethylene Geomembranes, 576
- In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481
- Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
- Photochemical Destruction of Cyanide in Landfill Leachate, 507
- VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

Oxygen demand

- Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400

Oxygen transfer

- Aeration Performance of Low Drop Weirs, 648
- Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726

Ozone

- Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425
- Modeling Water Treatment Chemical Disinfection Kinetics, 469
- Photochemical Destruction of Cyanide in Landfill Leachate, 507

Ozonization

- Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406

Panels

- Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027
- Drywall Joint Finishing: Productivity and Ergonomics, 181
- Dynamics of Nonlinear Aeroelastic Systems, 24
- Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258
- Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122
- Performance of Profiled Concrete Shear Panels, 1065
- Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Strength of Plate Girder Web Panels under Pure Shear, 1045

Parallel processing

- Stochastic Approach to Delineating Wellhead Protection Areas, 1302

Parameters

- Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420
- Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241
- Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Estimation of Biokinetic Parameters for Unsaturated Soils, 490
- Genetic Algorithms for Calibrating Water Quality Models, 398
- Global Identification of Surface Irrigation Parameters, 869
- Kostiakov Infiltration Parameters from Kinematic Wave Model, 868
- Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266
- Revised Design Parameters for Vertical Curves, 1238
- Sampling Design Methods for Water Distribution Model Calibration, 1318
- Simplified Frequency Content Estimates of Earthquake Ground Motions, 539
- Soil Hydraulic Models Selection Based on In-Situ Measurements, 889
- Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066
- Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129
- Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323

Parks

- Efficiency in the Bag, 1498

Particle motion

- Experiments on Saltation of Sand in Water, 764
- Gravitational Fall Velocity of Sphere in Viscous Fluid, 350

Particle size

- Does Filtration Efficiency Affect Measurements of Particle Chemical Composition?, 454
- Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790
- Experiments on Saltation of Sand in Water, 764
- Particle Size Distribution and Metal Content in Street Sediments, 466
- Transport of Dry Aerosols in Turbulent Jets, 494

Particle size distribution

- Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717
- Effect of GGBFS Particle-Size Distribution on Mortar Compressive Strength, 975
- Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455
- Physical Characteristics of Urban Roadway Solids Transported During Rain, 422
- Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Particles

- Does Filtration Efficiency Affect Measurements of Particle Chemical Composition?, 454

Particles

Particles

Particle Model for Simulating Flow Over Large Areas, 712

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Transport of Dry Aerosols in Turbulent Jets, 494

Particulate media

Analysis of Granular Bases Using Discrete Deformable Blocks, 1267

Partnering

Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900

From Product to Behavior, 942

Improving Construction Methods: A Story About Quality, 920

Partnering: Agreeing to Agree, 945

Partnering Continuum, 939

Partnerships

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Passenger transportation

Benckmarking for Design of Major Airports Worldwide, 1246

Passive control

Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267

Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082

Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081

Pavement condition

Artificial Neural Network Approach for Pavement Maintenance, 113

Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257

Improving IDOT's Pavement Condition Rating Process, 836

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Pounding the Pavement, 1525

Toward Improved Highway Quality: Lessons from Western Europe, 906

Pavement damage

Effective Temperature Differential in Concrete Pavements, 1208

Novel System for Automatic Pavement Distress Detection, 104

Pavement deflections

Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257

Pavement design

Airport Facilities: Innovations for the Next Century, 1542

General Formulation for Multilayered Pavement Systems, 1204

Nonlinear Temperature Effects on Multilayered Concrete Pavements, 1211

Pounding the Pavement, 1525

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Pavement deterioration

Pounding the Pavement, 1525

Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834

Pavement management systems

Improving IDOT's Pavement Condition Rating Process, 836

Simulating Highway Infrastructure Management Policies, 938

Pavement markings

Evaluation of Traffic Markings in Cold Regions, 1199

Pavement overlays

Fracture Behavior of Geosynthetic Interlayers in Road Pavements, 1255

Investigating Performance of Bonded Concrete Overlays, 996

Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834

Pavements

Application of Geotechnical Principles in Pavement Engineering, 1544

Effect of Variability on End Product Specifications, 156

Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954

Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253

Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479

General Formulation for Multilayered Pavement Systems, 1204

Identifying Component Variability of End Product Specification Tests, 155

Impact of FWD Testing Variability on Pavement Evaluations, 1252

Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961

Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203

Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835

Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266

Path Planning for a Machine Vision Assisted, Telemated Pavement Crack Sealer, 1212

PCC Airfield Pavement Response During Thaw-Weakening Periods, 87

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Sealant Degradation During Crack Sealing of Pavements, 983

Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843

Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834

Small-Scale Accelerated Pavement Testing, 1209

Payment

Effect of Variability on End Product Specifications, 156

Shadow Tolls, 1441

PCE

Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

SUBJECT INDEX

Peak flow

Modified Pipe Network Model for Incorporating Peak Demand Requirements, 1313

Peak values

Design Gust Wind Speeds in the United States, 1048
Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234

Peat

Dynamic Properties of Sherman Island Peat, 524
Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032

Pedestrian traffic flow

Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233

Pedestrians

Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233
Positively Not Pedestrian, 1436

Penetration

Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711
Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364
Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365

Penetration resistance

Analysis of Penetration Resistance of Concrete, 248

Penstocks

Guidelines for Inspection and Monitoring of In-Service Penstocks, 1574

People movers

Automated People Movers VI: Creative Access for Major Activity Centers, 1547

Performance

Comparison of U.S. Project Delivery Systems, 190
Compatibility and Rheological Study of ASR Asphalt Binder, 956
Displacement Estimates for Performance-Based Seismic Design, 1123
Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160
Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958
Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954
Future Fire Codes, 1453
Making the Grade, 1446
Method for Estimating Transition Probability in Bridge Deterioration Models, 833
Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835
Performance-Related Specifications for Highway Construction, 142
Polymer Modification of Arab Asphalt, 972
Susceptibility of Water Supply Reservoirs to Drought Conditions, 808
System Reliability Evaluation of Ductile Frame Structures, 1099

Performance evaluation
Aeration Performance of Low Drop Weirs, 648

Permeability

Belief Networks for Construction Performance Diagnostics, 99
Comparison of Perception Versus Reality in Timber Bridge Performance, 981
Connecticut's Bridge Infrastructure Monitoring Program for Assessment, 837
Evaluation of Containment Systems Using Hydraulic Head Data, 443
Evaluation of Traffic Markings in Cold Regions, 1199
Factors of Non Excusable Delays That Influence Contractors' Performance, 923
Impact of FWD Testing Variability on Pavement Evaluations, 1252
Investigating Performance of Bonded Concrete Overlays, 996
Maximizing CEO Performance, 927
PCC Airfield Pavement Response During Thaw-Weakening Periods, 87
Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599
Performance of Plain Concrete Runway Pavement, 1005
Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397
Prediction of Freezing and Thawing Durability of Concrete Paving Blocks, 957
Reliability Assessment of Pile-Supported Structural Systems, 1033
Reliability-Based Method for Fatigue Evaluation of Railway Bridges, I
Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207
Small-Scale Accelerated Pavement Testing, 1209
Surface-Treated Slag Concrete: Assessing Performance Under Cyclic Wetting, 977

Periodic functions
Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309

Permafrost
Site Investigations of Fuel Spill Migration into Permafrost, 85

Permeability
Air-Permeability as Measure of Rock Mass Behavior, 546
Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435
Darcian, Transitional, and Turbulent Flow through Porous Media, 746
Free Surface Flow over Permeable Wavy Bed, 757
Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492
Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961
Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542
Open-Graded Highway Bases Make Permeameter Setup Important, 1213
Permeability and Sorption Properties of Mature Near-Surface Concrete, 953
Permeability of Lime-Treated Lateritic Soil, 1256
Permeation of Sand-Processed Clay Mixtures with Calcium Chloride Solutions, 547

Permeability

Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499

Surface-Subsurface Model for Trench Infiltration Basins, 1311

Permeability tests

Air-Permeability as Measure of Rock Mass Behavior, 546

Permeameters

Open-Graded Highway Bases Make Permeameter Setup Important, 1213

Permits

Optimal Allocation of Water Withdrawals in River Basin, 1320

Personnel management

Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150

Perturbation

Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338

PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Pesticides

Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

Petroleum

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485

pH

Chemical Reactions and Gas Transfer in Natural Waters, 384

Pharmaceuticals

Management of Discarded Pharmaceuticals, 1372

Phase angles

Wave Phase Shift at Coastal Structures, 1334

Phenol

Advanced Oxidation Processes for Degradation of 2,4-Dichloro- and 2,4-Dimethylphenol, 457

Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474

Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470

Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Phosphoric acid

Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997

Phosphorus

Temperature Responses of Biological Phosphorus-Removing Activated Sludge, 397

Phosphorus removal

Temperature Responses of Biological Phosphorus-Removing Activated Sludge, 397

Photochemical reactions

Photo-Initiated Degradation of Geotextiles, 633

1998 ASCE TRANSACTIONS

Photogrammetry

Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation, 1192

Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181

Physical properties

Geophysical Exploration for Engineering and Environmental Investigations, 1568

Piers

Preparing for Pier A, 1482

Piezoelectricity

Measuring Droplet Impact Energy with Piezoelectric Film, 878

Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362

Pile bearing capacities

General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635

Pile foundations

Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Local Scour at Piled Bridge Foundations, 698

Reliability Assessment of Pile-Supported Structural Systems, 1033

State of Restored Practice Review in FRP Composite Piling, 127

Pile groups

Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620

Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577

Lateral Load Behavior of Full-Scale Pile Group in Clay, 570

Wave Scour Around Group of Vertical Piles, 1351

Piles

Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549

State of Restored Practice Review in FRP Composite Piling, 127

Pine wood

Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Pipe flow

Colebrook-White Formula for Pipe Flows, 655

Effect of Bed-Load Movement on Flow Friction Factor, 665

Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707

Pipe laying

Microtunneling: An Owner's Perspective, 1391

Pipe lining

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Pipe networks

Colebrook-White Formula for Pipe Flows, 655

Cost-Effectiveness Analyses of Libya's Water Supply System, 1316

Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776

SUBJECT INDEX

Plates

Modified Pipe Network Model for Incorporating Peak Demand Requirements, 1313

Pipeline design

Design of Pipelines to Transport Neutrally Buoyant Capsules, 780

Pipeline transportation

Design of Pipelines to Transport Neutrally Buoyant Capsules, 780

Freight Pipelines: Current Status and Anticipated Future Use, 1235

Pipelines

Cliffside Correction, 1485

Energy Estimates for Discretization Errors in Water Hammer Problems, 692

Evolutionary Algorithm for Minimization of Pumping Cost, 111

Freight Pipelines: Current Status and Anticipated Future Use, 1235

Making Way for Water, 1467

Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585

Pipelines in the Constructed Environment, 1586

Probing Pipelines (available only in Geoenvironmental Special Issue), 1428

Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Pipes

Do Coated Pipes Last Longer?, 1499

Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

Limitations and Proper Use of the Hazen-Williams Equation, 756

Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234

Seismic Performance Assessment of Water Delivery Systems, 841

Theory of Pipe Drainage Assisted by Mole Drainage, 864

Pitch

Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186

Simulation of Ringing in Offshore Systems under Viscous Loads, 280

Water Wave Control by Submerged Pitching Porous Plate, 260

Plane strain

A Unique Critical State for Sand?, 630

Planform

Bending Solution for Thick Plates with Quadrangular Boundary, 205

Laboratory Study of Beach Nourishment Behavior, 1349

Planning

Drought Contingency Planning: Evaluating the Effectiveness of Plans, 1307

Making the Transition from Engineer to Entrepreneur, 914

Riding the Rail, 1509

River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328

Plastic deformation

Endochronic Theory of Continuum Damage Mechanics, 230

Model Prediction of Rutting in Asphalt Concrete, 1254

Plastic design

Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150

Plastic theory

Plastic-Damage Model for Interfaces in Cementitious Materials, 302

Plasticity

Bounding Surface Models Applied to Fatigue of Plain Concrete, 276

Limit Analysis Versus Limit Equilibrium for Slope Stability, 523

Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288

Plastic Collapse Analysis of T-Beams Under Bending, 307

Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282

Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283

Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316

Simplified Model of Low Cycle Fatigue for RC Frames, 1143

Strength of Webs Subjected to Compressive Edge Loading, 9

Stress-Resultant Plasticity for Frame Structures, 371

Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334

Plate girders

Strength of Plate Girder Web Panels under Pure Shear, 1045

Strength of Webs Subjected to Compressive Edge Loading, 9

Plates

Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368

Bending Solution for Thick Plates with Quadrangular Boundary, 205

Buckling of Unilaterally Constrained Infinite Plates, 221

Corrected Solution of Clamped Ring Plate with Edge Point Load, 292

Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134

Design Method for Buckling Failure of Plate Elements, 1117

Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103

External Plate Reinforcement for Concrete Beams, 1180

Free Vibration Analysis of Thick Superelliptical Plates, 222

Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338

Layerwise Composite Plate Analysis Using an Element Template Methodology, 281

Plates

- Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123
- Seismic Performance of Confined Sill Plate Connections, 3
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365
- Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228
- Water Wave Control by Submerged Pitching Porous Plate, 260

Platforms

- Attitude Control of Space Platform Based Tethered Satellite System, 19
- Open-Close Loop Active Control of Articulated Leg Platform, 297

Plotting

- Monitoring Hydraulic Gradient Using Three-Point Estimator, 434

Plumbing fixtures

- Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403

Plumes

- Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679
- Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782
- Recirculating Flow Generated by Line-Source Bubble Plumes, 754
- Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713
- Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700

Plunging flow

- Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet, 767

Polar ice

- Lunar Polar Ice: Implications for Lunar Development, 33

Poles

- Time-Delay Compensation in Active Control of Structures, 330

Policies

- Comparison of Alternate Signal Timing Policies, 1260
- Modeling Helps in Understanding Policy Alternatives: A Case, 901

Pollutants

- Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444
- Effects of Infiltration on Agricultural Runoff Contamination, 478
- Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430
- Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825
- Tidal and Transport Modeling by Using Turbulence $k-\epsilon$ Model, 399

Pore size distribution

- Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644

Pollution abatement

- Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785

Pollution control

- Performance of Vegetative Controls for Treating Highway Runoff, 509
- Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381
- Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660

Polyethylene

- Antioxidant Depletion Lifetime in High Density Polyethylene Geomembranes, 576
- Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220
- Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234

Polymers

- Do Coated Pipes Last Longer?, 1499
- Effects of Moisture on Pyrolysis of Polypropylene, 482
- Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
- Polymer Modification of Arab Asphalt, 972
- Tensile Properties of Geogrids Under Cyclic Loadings, 597

Polynomials

- Canal Control Algorithms Formulations, 854
- Smooth Surface Approximation for Computing Pit Excavation Volume, 1189
- Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228

Polystyrene

- Putting Polystyrene to Work, 1435

Ponds

- Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463
- Failure of Cyanide Overflow Pond Dam, 988

Pontoons

- Mix and Match, 1413

Pools

- Mixing Behavior of Density-Stratified Pools, 680

Population statistics

- New Methodology for Calibrating the Lowry Model, 1276

Pore pressure

- Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638
- Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
- Observed Performance of Multipropped Excavation in Stiff Clay, 608
- Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619
- Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564
- Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565

Pore size distribution

- Development of New Durability Index for Clay Bricks, 47

SUBJECT INDEX

Pore water pressure

Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599

Poroeasticity

Constitutive Modeling of Unsaturated Drying Deformable Materials, 289

Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339

Spectral Green's Dyadic for Point Sources in Poroeastic Media, 207

Porosity

Effect of Transition Aone on Elastic Stresses in Concrete Materials, 987

Use of Porosity in Models of Consolidation, 235

Water Wave Control by Submerged Pitching Porous Plate, 260

Porous materials

Use of Porosity in Models of Consolidation, 235

Water Wave Control by Submerged Pitching Porous Plate, 260

Porous media

Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432

Constitutive Modeling of Unsaturated Drying Deformable Materials, 289

Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339

Darcian, Transitional, and Turbulent Flow through Porous Media, 746

Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822

Modeling the Heat Sense Flowmeter, 871

NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477

Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817

Self-Weight Subsidence of Saturated Soft Porous Media, 286

Semianalytical Solution to Richards' Equation for Layered Porous Media, 890

Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825

Porous media flow

Representative Ground Water Monitoring in Fractured Porous Systems, 436

Two Applications of Flow in Porous Media with Threshold Gradient, 801

Portland cements

Influence of Carbonation on Leaching of Cementitious Wasteforms, 426

Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973

Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978

Ports

Ports '98, 1587

Seismic Guidelines for Ports, 1593

Portugal

Bridge Within a Bridge, 1505

Predictions

Positioning

Carriage Position Adjustment of Triangular Running Skyline System, 1067

Three-Dimensional Positioning Using SPOT Stereo Strips with Sparse Control, 1185

Post tensioning

Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114

Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101

Settlement Behavior of Posttensioned Slabs-on-Grade, 995

Postbuckling behavior

Design Method for Buckling Failure of Plate Elements, 1117

Strength of Plate Girder Web Panels under Pure Shear, 1045

Potable water

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376

Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486

Efficiency in the Bag, 1498

The Membrane Treatment, 1494

Modeling Water Treatment Chemical Disinfection Kinetics, 469

Potential flow

Free Surface Flow over Permeable Wavy Bed, 757

Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768

Potential theory

Forces on Edge-Hinged Panels in Gradually Varied Flow, 743

Power spectral density

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Powerplants

The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Precipitation

Average Areal Precipitation by Percentage Weighted Polygon Method, 799

Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455

Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Predictions

Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168

Method for Estimating Transition Probability in Bridge Deterioration Models, 833

Performance-Related Specifications for Highway Construction, 142

Preloading

Preloading

Experimental Analysis of Bolted Connections: Snug Versus Preloaded Bolts, 1108

Preservation

Preservation of Historic Thin-Shell Concrete Structures, 36

Pressure distribution

Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669

Pressure measurement

Evaluation of Fluctuating Pressures Measured with Connection Tubes, 695

Sampling Design Methods for Water Distribution Model Calibration, 1318

Pressure measuring instrument

Estimating Wave Heights from Pressure Measured in Sand Bed, 1341

Pressure reduction

Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707

Pressuremeter tests

Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293

Pressures

Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220

Finite-Element Analyses of Flexible Pavements, 1258

Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960

Linear Representation of Steady-State Line for Sand, 640

Pressurized flow

Clear-Water Contraction Scour under Bridges in Pressurized Flow, 676

Prestressing

Bridge Prestress Losses in Dry Climate, 69

Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090

Shape of Deployable Membrane Reflectors, 26

Smart Prestressing with Shape-Memory Alloy, 342

Pretensioning

Tension Control Bolts: Strength and Installation, 58

Priorities

Priorities in Building Envelope Design, 42

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

Prisons

Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Private sector

Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

Collaborations Keynote Address, 921

Construction Congress Keynote Address, 941

Economic and Technical Issues for Lunar Development, 31

Privatization and the Public/Private Partnership, 928

Role of Lunar Development in Human Exploration of the Solar System, 30

1998 ASCE TRANSACTIONS

Shadow Tolls, 1441

Privatization

Evaluating Viability of Privatized Transportation Projects, 839

Obstacles and Opportunities in International Engineering Services, 936

Privatization and the Public/Private Partnership, 928

Sell-Off, 1526

Probabilistic methods

Bridge Fatigue Life Estimation From Field Data, 1399

Coastal Flood Risk Assessment, 1348

Combining Snow and Earthquake Loads for Limit States Design, 10

Lagrangian/Eulerian Description of Dynamic System, 317

Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Stochastic Analysis of Load Combination, 320

Uncertainty in Back Analysis of Slopes: Kettleman Hills Case History, 634

Probabilistic models

Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

Ordered Probability Modeling of Seat Belt Usage, 1232

Probabilistic Model for Water Distribution Reliability, 1304

Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173

Probability

Assessment of Scaling Behavior of Regional Floods, 811

Multivariate Modeling of Flood Flows, 663

Pickup Probability for Sediment Entrainment, 675

Probabilistic Bridge Scour Estimates, 736

A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632

Reliability Assessment of High-Strength Concrete Columns, 273

Probability density functions

Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234

Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206

Statistics of Sediment Transport in Goodwin Creek, 775

Probability distribution

Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796

Depth Probability Distributions in Stream Reaches, 673

Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

Progression and Variability of Damage on Rubble Mound Breakwaters, 1356

Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

SUBJECT INDEX

Probability distribution functions

Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417

Probability theory

Simulation of Stationary Non-Gaussian Translation Processes, 220

Problem solving

Defusing the Millennium Bomb, 1461

How Creative Engineers Think, 1430

Project-Based Course for Integration of Design and Construction at WPI, 1021

Solutions Manual-Fluid Mechanics: An interactive Text, 1595

Techniques for Administrative Creativity in Local Government, 895

Process variables

Process Noise and Optimum Observation in Conditional Stochastic Fields, 366

Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173

Processing

Factors That Affect Process Quality in the Life Cycle of Building Projects, 163

Standards Modeling Language, 102

Production planning

Modeling and Analysis of Aggregate Production Operations, 186

Shielding Production: Essential Step in Production Control, 140

Simulation-Based Scheduling with Continuous Activity Relationships, 152

Productivity

Construction Labor Productivity Modeling with Neural Networks, 198

Drywall Joint Finishing: Productivity and Ergonomics, 181

Early Form Removal of Reinforced Concrete Slabs, 1390

Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150

Methodology for Prioritizing Cost-Effective Construction Technologies, 161

Multiskilled Labor Utilization Strategies in Construction, 196

Performance of Concrete Placing in Hong Kong Buildings, 153

Seminar Review: Applying Technology in Project Management and Product Design, 935

Shielding Production: Essential Step in Production Control, 140

Teamwork - the Key to Productivity, 896

Time Management for Engineers and Constructors, 1600

Professional activities

Managing Your Career in an Era of Change, 1019

Speak Out: The Engineer as Communicator, 908

Professional advancement

Career Fitness, 909

Communication and Career Advancement, 910

Professional development

Balancing Corporate and Personal Values, 915

Project evaluation

Career Fitness, 909

The Case for a Technology Management Institute, 897

Corporate University: Consulting Firm Case Study, 917

Executive Fellowship Program: Lessons for Engineers, 918

Into the 21st Century: A Great Time to Be a Civil Engineer, 919

Managing Your Career in an Era of Change, 1019

Resources for Ongoing Professional Development, 911

Toward the Environment and Sustainability Ethic in Engineering Education and Practice, 1020

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Professional engineering

Ethics: A Professional Concern, 4

Professional practice

Balancing Corporate and Personal Values, 915

Into the 21st Century: A Great Time to Be a Civil Engineer, 919

Professional Practice Survey Results, 929

Teaching Engineering Design with Practitioner Supervision: A Case Study, 1022

Time Management for Engineers and Constructors, 1600

Professional role

Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023

Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447

Tomorrow's Civil Systems Engineer—The Master Integrator, 1017

Professional services

Lessons from an Outpatient Surgery Center, 46

Professional societies

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Profiles

Gradually Varied Flow Solutions in Newton-Raphson Form, 881

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Profits

Competitive Bidding Strategy Model and Software System for Bid Preparation, 139

Programming

Using a Programmable Calculator to Find ϕV , for Steel Beams, 1395

Progressive failure

The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001

Project evaluation

Evaluating Viability of Privatized Transportation Projects, 839

Laboratory Study of Beach Nourishment Behavior, 1349

Project management

- Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191
- Comparison of U.S. Project Delivery Systems, 190
- Computer-Supported Collaborative Negotiation Methodology, 97
- Conflict Management Diagnosis at Project Management Organizations, 937
- Critical Communications Variables, 146
- Design Guidelines for Design-Build Projects, 905
- Determining Schedule Impact: Working Practice, 1404
- Express Design, 1483
- Factors Affecting Contractors' Risk of Cost Overburden, 904
- Field-Level Management's Perspective of Design/Build, 1405
- From Product to Behavior, 942
- An Integrated Project Management System, 922
- Linear Scheduling Model: Development of Controlling Activity Path, 171
- Multimedia for Construction Project Management: Project Navigator, 149
- Net Gains, 1522
- Partnering Continuum, 939
- Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381
- Privatization and the Public/Private Partnership, 928
- Realizing Engineer-Led Design/Build, 1444
- Risky Business, 943
- Seminar Review: Applying Technology in Project Management and Product Design, 935
- Simulation Modeling and Management of a Large Basement Construction Project, 100
- Small Firms, Big Advantages, 1515
- A Summary of Construction Congress V, 940
- Weighing the Options, 950
- Project managers**
- Managing Innovation Information in Engineering and Construction Firms, 903
- Quality Improvement Methodology and Implementation, 182
- Project planning**
- Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550
- Competitive Bidding Strategy Model and Software System for Bid Preparation, 139
- Decision Support System for Residential Land Development Site Selection Process, 52
- Interactions Between Construction Planning and Influence Factors, 169
- On-Call Contracting Strategy and Management, 930
- Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381
- Quantification of Construction Clients' Needs Through Paired-Comparisons, 907
- Robust Reliability of Projects with Activity-Duration Uncertainty, 154
- Scheduling Projects with Repeating Activities, 172
- Simplified Simulation System for Construction Projects, 148
- Simulation-Based Scheduling with Continuous Activity Relationships, 152

- A Tale of Two Bids, 1421
- Weighing the Options, 950

Project selection

- Evaluating Viability of Privatized Transportation Projects, 839
- Model for Public Sector Design-Build Project Selection, 195

Projectile impact

- Analysis of Penetration Resistance of Concrete, 248

Projectiles

- Analysis of Penetration Resistance of Concrete, 248

Projects

- Design-Build Alternative: A Contract Method, 944
- Design-Build Solutions, 948
- Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180
- From Product to Behavior, 942
- Grouts and Grouting: A Potpourri of Projects, 1571
- Privatization and the Public/Private Partnership, 928
- Project Delivery Trends: A Contractor's Assessment, 946
- Risky Business, 943

Property values

- Getting the GIST of Costs, 1478

Proportioning

- Proportioning: Missing Step in Model Building Code Seismic Design, 1388

Protective coatings

- Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984
- Ground Attack, 1406
- Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255

Public participation

- Step by Step, 1490

Public transportation

- Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Public welfare

- Equitable Traffic Assignment with Environmental Cost Functions, 1196

Public works

- Cold Regions Impact on Civil Works, 1552
- Construction Congress Keynote Address, 941
- Maintenance of Municipal Infrastructure, 844
- TEA-21: Something for Everyone, 1507

Publishing

- High-Tech Text, 1459

Pull-out resistance

- Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
- Pullout Performance of Inclined Helical Screw Anchors in Sand, 583
- Pullout Resistance of High-Voltage Strengthened Ground Anchors, 603
- Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

SUBJECT INDEX

Rainfall

Pump intakes

Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661

Pumping

Design of Pipelines to Transport Neutrally Buoyant Capsules, 780

Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297

Evolutionary Algorithm for Minimization of Pumping Cost, 111

Transient Analysis with Time-Decoupled Pumping Station, 682

Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283

Pumping stations

Transient Analysis with Time-Decoupled Pumping Station, 682

Pumps

Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202

Purlins

Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Pyrolysis

Effects of Moisture on Pyrolysis of Polypropylene, 482

Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

Qualifications

Verification and Validation of Case-Based Pre-qualification System, 109

Quality control

Project Delivery Trends: A Contractor's Assessment, 946

Shielding Production: Essential Step in Production Control, 140

Toward Improved Highway Quality: Lessons from Western Europe, 906

Quality control - management

Factors That Affect Process Quality in the Life Cycle of Building Projects, 163

Improving Construction Methods: A Story About Quality, 920

Total Quality Management Implementations and Results: Progress Update, 1389

TQM Implementation in State Departments of Transportation: View from the Firing Line, 902

Quality improvement

Quality Improvement Methodology and Implementation, 182

Quantitative analysis

Quantification of Construction Clients' Needs Through Paired-Comparisons, 907

Quarries

Guidelines for Quarystone Armor Units, 194

Quarry Conversion, 1502

Questionnaires

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

Subcontractors' Bidding Decisions, 151

Queueing

Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222

Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224

Radar

Cure for Thinning Concrete, 1532

Modeling of Subsurface Pulsed Radar for Nondestructive Testing of Structures, 976

Radioactive waste disposal

Containing the Cold War's Hot Waste, 1519

Low-Level and Mixed Radioactive Waste In-Drum Solidification, 1361

Radioactive wastes

Containing the Cold War's Hot Waste, 1519

Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030

Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031

Low-Level and Mixed Radioactive Waste In-Drum Solidification, 1361

Mercury Disposal Via Sulfur Reactions, 488

Rail transportation

Riding the Rail, 1509

The San Francisco Connection, 1473

Traffic and Transportation Studies, 1601

Railroad ballast

Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Railroad engineering

The San Francisco Connection, 1473

Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Railroad stations

Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233

Railroad tracks

Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284

Method for Railroad Track Foundation Design. I: Development, 555

Method for Railroad Track Foundation Design. II: Applications, 556

Railroads

Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284

New Form of Road/Railway Transition Curves, 1264

Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381

Rain gages

Mean-Field Rainfall Bias Studies for WSR-88D, 809

Rainfall

Characteristics of Shallow Rain-Impacted Flow over Smooth Bed, 788

Mean-Field Rainfall Bias Studies for WSR-88D, 809

Rainfall

Modeling Spatial Variability of Rainfall Over a Catchment, 806

Urban Wet-Weather Flow Management: Research Directions, 1299

Rainfall-runoff relationships

Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792

Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Theoretical Justification of SCS Method for Runoff Estimation, 892

Ramps

Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846

Random processes

Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328

Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206

Simulation of Stationary Non-Gaussian Translation Processes, 220

Spectral Identification of Nonlinear Structural Systems, 296

Stochastic Analysis of Load Combination, 320

Random variables

Estimation of Conditional Non-Gaussian Translation Stochastic Fields, 261

Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965

Reliability Assessment of High-Strength Concrete Columns, 273

Random vibration

Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238

Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311

Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345

Random waves

Oscillating Tidal Barriers and Random Waves, 694

Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345

Rapid transit railways

Contractor Selection Process for Taipei Mass Rapid Transit System, 925

Riding the Rail, 1509

Rapid transit systems

Automated People Movers VI: Creative Access for Major Activity Centers, 1547

Ratings

Evaluation of Existing RC Slab Bridges, 990

Proofload Testing of Deteriorated Steel Girder Bridges, 66

Rating Adjustment for Settlement of Cutthroat Flumes, 893

Ratio

Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582

1998 ASCE TRANSACTIONS

Rayleigh waves

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

Reactions, mechanics

Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344

Ready mixed concrete

Performance of Concrete Placing in Hong Kong Buildings, 153

Reaeration

Analysis of Reaeration Equations Using Mean Multiplicative Error, 386

Real-time programming

Applications of Advanced Technologies in Transportation, 1545

Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812

Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183

General Creep-Time Equation, 966

Recharge basins

Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

Recirculation

Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474

Recirculating Flow Generated by Line-Source Bubble Plumes, 754

Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363

Reconstruction

Cementing the Future, 1531

Rebuilding Bosnia, 1419

Recovery planning

Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473

Sludge's Re-Treat, 1524

Rectangular hollow sections

Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150

Recursive functions

Recursive Formulation of Force Method Programmed in Logic, 93

Recycling

Concrete Change, 1423

Contaminated Soil Management at Construction Sites, 1376

Location of Recycling Depots with GIS, 1277

Materials Balance for Municipal Solid-Waste Management, 383

Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416

Recycled Materials in Geotechnical Applications, 1588

Redundancy

Reducing Vulnerability of Water Supply Systems to Attack, 847

Reflection

Estimating the Directional Spectrum of Waves Near a Reflector, 1359

Regeneration

Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332

Regional analysis

Assessment of Scaling Behavior of Regional Floods, 811

Design Gust Wind Speeds in the United States, 1048

Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Regional planning

Input-Output Economic Evaluation of System of Levees, 1306

Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394

Spatial Variations in Travel Behavior within Greater Toronto Area, 1218

Regression analysis

Construction Labor Productivity Modeling with Neural Networks, 198

Morphological Study of Coarse Aggregates Using Image Analysis, 969

New Methodology for Calibrating the Lowry Model, 1276

Process of In-Place Evaluation of Concrete Strength, 980

Regression models

Use of Regression Models for Analyzing Highway Stormwater Loads, 493

Regulated flow

Double-Leaf Gate for Energy Dissipation below Regulators, 778

Regulation

Introduction of Smith Predictor into Dynamic Regulation, 856

Regulations

Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180

HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379

Management of Discarded Pharmaceuticals, 1372

Management of Solid Waste from Abrasive Blasting, 1369

Obstacles and Opportunities in International Engineering Services, 936

Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585

Statewide Standardization of Site Improvement Standards, 1279

Water Resources: A New Era for Coordination, 1606

Rehabilitation

Airport Facilities: Innovations for the Next Century, 1542

All Decked Out, 1466

Cost Allocation for Multiuse Water Systems in Egypt, 876

Downtown Goes Uptown in Stainless Steel, 1416

Foundation Liquefaction Countermeasures for Earth Embankments, 573

Out of Sight, Out of Time, 1431

Pipelines in the Constructed Environment, 1586

Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381

Preservation of Historic Thin-Shell Concrete Structures, 36

Rapid Redecking, 1445

Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589

Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843

Smokestack Rescue, 1457

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Reinforcement

Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054

Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125

Confinement Reinforcement Design Considerations for Ductile HSC Columns, 1134

Detailing for Reinforcement Stability in RC Members, 1093

Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115

Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974

External Plate Reinforcement for Concrete Beams, 1180

Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569

Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092

Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121

Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325

Small-Column Compression Tests on Concrete Confined by WWF, 1053

Reinforcing steels

Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057

Relaxation, mechanics

Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777

Reliability

Application of Equiredundancy Design to M-Estimation, 1188

Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203

Defying Gravity, 1422

Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176

Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177

Reliability

- Lagrangian/Eulerian Description of Dynamic System, 317
- Optimal Performance of Civil Infrastructure Systems, 1584
- Overtopping Reliability Models for River Levee, 786
- Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238
- Reliability-Based Approach to Linear Covariance Control Design, 229
- Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1
- Robust Reliability of Projects with Activity-Duration Uncertainty, 154
- Simplified Dynamic Reliability Models for Hydraulic Design, 687
- Slope Reliability Analysis Using Generalized Method of Slices, 559
- Reliability analysis**
- Reliability Assessment of Pile-Supported Structural Systems, 1033
- Reliability of Energy Method to Predict Lift Slab Structures Stability, 1006
- Service-Life Prediction of Deteriorating Concrete Bridges, 1059
- Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845
- Remedial action**
- After the Rain Has Fallen: Ground Water Management Symposium, 1541
- Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191
- Automatic Savings, 1463
- Bench-Scale Investigation on Vibrorecovery of NAPL Ganglia from Sands, 483
- Brownfields by the Book, 1520
- Cable Stay Conundrum, 1488
- Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497
- Classification of Flotation Processes in Wastewater Decontamination, 427
- Comparative Kinetics of Bacterial Reduction of Chromium, 424
- Comparison of Autotrophic and Mixotrophic Biofilters for H₂S Removal, 415
- Computational Issues for Optimal In-Situ Bioremediation Design, 1286
- Cost Effectiveness and Incremental Cost Analyses: Alternative to Benefit-Cost Analysis for Environmental Remediation Projects, 1362
- Dealing with DNAPLs, 1521
- Decontamination of U-Rich Waters by Granular Iron, 377
- Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427
- Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475
- Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521
- Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439
- Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297

1998 ASCE TRANSACTIONS

- Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288
- Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463
- Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453
- Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373
- Ex-Situ Remediation of a Metal-Contaminated Superfund Soil Using Selective Extractants, 450
- Fluidized Bed for Removing Iron and Acidity from Acid Mine Drainage, 459
- HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379
- Injection of Nutrients and TEAs in Clayey Soils Using Electrokinesis, 557
- Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
- Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287
- Mixed-Integer Chance-Constrained Models for Ground-Water Remediation, 1312
- Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464
- Oil in the Soil, 1523
- Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423
- Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
- Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12
- Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393
- Presence of Nonconvexity in Groundwater Concentration Response Function, 1282
- Pump-and-Treat Rescue, 1432
- Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470
- Risk-Based Correction Action and Brownfields Restoration, 1590
- Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417
- Superfund Success, Superfast, 1530
- Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484
- System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408
- Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283
- VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367
- Washing of Various Lead Compounds from a Contaminated Soil Column, 503
- Water Resources and the Urban Environment-98, 1608
- Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501
- Remote sensing**
- Viability of Remote Sensing on Two-Lane Roads, 1198
- Renovation**
- Cellar Performance (Available in Structural Engineering Special Issue only), 1493
- Challenges Met in Engineering Newark International Airport Structures, 1394
- Over the Top Concrete, 1414

SUBJECT INDEX

Project Delivery and the U.S. Dept. of State, 947
Rebuilding History, 1510
Riding the Rail, 1509
Santa Fe Sensation, 1450
This Time With Feeling, 1508
Trends in the Construction Needs of Hospital Facilities, 53

Repairing

Artificial Neural Network Approach for Pavement Maintenance, 113
Cure for Thinning Concrete, 1532
Rapid Redecking, 1445
Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589
Sealant Degradation During Crack Sealing of Pavements, 983

Repeated loading

Method for Railroad Track Foundation Design. I: Development, 555
Safety Estimation Method for Structures with Cumulative Damage, 351

Reports

Site Investigations: A Guide (available in Geoenvironmental Special Issue only), 1470
Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Research

Collaborations Keynote Address, 921
Critical Communications Variables, 146
Foundation for Research in Computing in Civil Engineering, 92
Pounding the Pavement, 1525
When the Levee Inflates, 1411
Wood Engineering in the 21st Century: Research Needs and Goals, 1611

Research and development

The Next 25 Years: The Future of the Construction Industry, 933
Recent Progress in River Ice Engineering Research at CRREL, 86

Research needs

Cost Optimization of Concrete Structures, 1088
Urban Wet-Weather Flow Management: Research Directions, 1299

Reservoir design

Application of Automatic Differentiation to Reservoir Design Models, 1298

Reservoir management

Optimal Operation of South Indian Irrigation Systems, 1309

Reservoir operation

Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs?, 1314
Optimal Operation of South Indian Irrigation Systems, 1309
Reservoir Operation Studies of Sabarmati System, India, 1285
Susceptibility of Water Supply Reservoirs to Drought Conditions, 808

Reservoir sites

Estimation of Delta Profile in the Indravati Reservoir, 659

Reservoirs

Critical Submergence for Intakes in Still-Water Reservoir, 657
Ice Thrust in Reservoirs, 89
Interest in Deposits (available only in Geoenvironmental Special Issue), 1426
Inviting Trouble Downstream, 1417
One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732
Over the Top Concrete, 1414
Rapad Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999
Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731
Upstream Boundary of Reservoir in Dynamic Analysis, 265

Residence time

Derivation of Mean Cell Residence Time Formula, 428
Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
Residence Time of Freshwater in Boston's Inner Harbor, 1333
Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

Residential location

Decision Support System for Residential Land Development Site Selection Process, 52

Residual soils

Interpretation of Plate Load Tests on Residual Soil Site, 605

Residual stress

General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635

Resilience

Reducing Vulnerability of Water Supply Systems to Attack, 847

Resistance

Analysis of Cone Resistance: Review of Methods, 538
Calibration Chamber Size Effects on Penetration Resistance In Sand, 607
Global Identification of Surface Irrigation Parameters, 869
Low Velocity Impact Resistance of Laminated Architectural Glass, 37
Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243

Resistance factors

Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Resonance

Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331
Vibration Isolation of Machine Foundations by Periodic Trenches, 259

Resonance

Resonance tests

Resonance tests

Energy-Injecting Virtual Mass Resonant Column System, 566

Tensile and Nondestructive Testing of FRP Bars, 116

Resource development

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Resource management

Simplified Simulation System for Construction Projects, 148

Resources

Resource Leveling of Linear Schedules Using Integer Linear Programming, 168

Resources for Ongoing Professional Development, 911
Space 98, 1596

Response spectra

Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582

Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

Residual Displacement Response Spectrum and Its Application, 1083

Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345

Responsibilities

Weighing the Options, 950

Responsibility

Who Pays for Defective Design?, 949

Restoration

Engineering Approaches to Ecosystem Restoration, 1562

Rock Dam Revitalization, 1477

Restraint systems

Behavior of Nonlinearly Restrained Slender Bridge Piers, 71

Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087

Shrinkage Cracking of Restrained Concrete Slabs, 301

Torsional Restraint Against Elastic Lateral Buckling, 1156

Retaining walls

Design and Construction of Earth Retaining Systems, 1558

Evaluation of the Tensar ARES™ Retaining Wall System, 1565

Test Wall Promises Big Savings (Available in Geo-Environmental Special Issue Only), 1516

Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624

Retention

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ⁵¹Cr, 388

Retention time

Derivation of Mean Cell Residence Time Formula, 428

Retrofitting

Bridge Within a Bridge, 1505

Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134

1998 ASCE TRANSACTIONS

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160

Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131

Foundation Liquefaction Countermeasures for Earth Embankments, 573

Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57

Rebuilding History, 1510

Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013

Seismic Retrofit Program for Los Angeles Bridges, 849
Shake, Rattle and Hold (Available in Structural Engineering Special Issue Only), 1539

Revenues

Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829

Revetments

River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328

Reynolds number

Darcian, Transitional, and Turbulent Flow through Porous Media, 746

Gravitational Fall Velocity of Sphere in Viscous Fluid, 350

Limitations and Proper Use of the Hazen-Williams Equation, 756

Relationships for Non-Darcy Flow in Rockfill, 670

Rheological properties

Direct Determination of Rheological Characteristics of Debris Flow, 749

Rheology

Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954

Rheological Equations in Asymptotic Regimes of Granular Flow, 245

Ridership

Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Rigid pavements

Back-Calculation of Concrete Pavement Modulus Using Road-Rater Data, 1210

Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206

Rigid pipes

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Rigid-body dynamics

Dynamics of Rigid Block Due to Horizontal Ground Motion, 294

Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030

Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Transformation Matrices for Finite and Small Rotations, 251

Rigidity

A Composite Sketch, 1409

SUBJECT INDEX

Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577

Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079

Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080

Strength of Plate Girder Web Panels under Pure Shear, 1045

Rings

Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142

Simulation of Ringing in Offshore Systems under Viscous Loads, 280

Riparian land

Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409

Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410

Ripple marks

Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357

Riprap

Riprap Sizing at Toe of Embankment Slopes, 727

Roughness of Loose Rock Riprap on Steep Slopes, 667

Risk

Risk-Cost Approach to Interim Drainage Structure Design, 1317

Risk acceptance

Construction Congress Keynote Address, 941

Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs?, 1314

Risk allocation

Risky Business, 943

Weighing the Options, 950

Risk analysis

2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303

Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191

Coastal Flood Risk Assessment, 1348

Contaminated Soil Management at Construction Sites, 1376

Data-Driven Analysis of "Corporate Risk" Using Historical Cost-Control Data, 144

Evaluating Health Risks From Ground-Water Contaminants, 429

Fuzzy Logic for Evaluating New Construction Technology, 175

Input-Output Economic Evaluation of System of Levees, 1306

Orientation to Health Risk Assessment for Practicing Engineers, 1364

Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519

Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829

Risk-Based Correction Action and Brownfields Restoration, 1590

Risk-Based Decision Making in Water Resources VIII, 1591

Risky Business, 943

Rivers

Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417

Risk management

Data-Driven Analysis of "Corporate Risk" Using Historical Cost-Control Data, 144

Environmental Exposure, 1497

Factors Affecting Contractors' Risk of Cost Overburden, 904

Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs?, 1314

Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280

River basins

Optimal Allocation of Water Withdrawals in River Basin, 1320

River beds

Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717

Estimation of Gravel-Bed River Flow Resistance, 769

Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739

River flow

River Flood Flow and Its Energy Loss, 674

Three-Dimensional Numerical Model for Flow through Natural Rivers, 642

River systems

River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328

Rivers

Analysis of Linear and Monoclonal River Wave Solutions, 734

Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818

Calculation of Channel and River Velocities, 750

Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381

Dynamics of Temperature Stratification in Lowland Rivers, 770

Engineering Approaches to Ecosystem Restoration, 1562

Fuzzy Optimization Model for Water Quality Management of River System, 1290

Getting the GIST of Costs, 1478

Ice-Tank Data on Brash-Ice Loads against Barges, 88

In-Stream Hollow-Fiber Membrane Aeration, 715

Local Scour at Skewed Piers, 737

Longitudinal Dispersion on Ice-Covered Rivers, 90

Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732

Recent Progress in River Ice Engineering Research at CRREL, 86

River Stage Forecasting Using Artificial Neural Networks, 794

Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686

Sediment Control at Water Intakes Along Sand-Bed Rivers, 716

Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Rivers

Tidal and Transport Modeling by Using Turbulence \bar{k} - $\bar{\omega}$ Model, 399

Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Rivets

Fatigue Strength of Riveted Connections, 1111

Road curves

Aspects of Stopping-Sight Distance on Crest Vertical Curves, 1239

Design Requirements of Equal-Arc Unsymmetrical Vertical Curves, 1247

Road design

New Form of Road/Railway Transition Curves, 1264

Road surface roughness

Dynamic Analysis of Existing Continuous Bridge, 60

Roads

Approaching *OD* Trip Volumes Based on Inverse T-V Equation, 1229

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Viability of Remote Sensing on Two-Lane Roads, 1198

Robotics

Construction Robots: The Search for New Building Technology in Japan, 1555

Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176

Implementation of Robotics in Building: Current Status and Future Prospects, 143

Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212

Robotics 98, 1592

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Robust control

Active Attenuation of Building Structural Response Using Robust Control, 272

Robust design

Reducing Vulnerability of Water Supply Systems to Attack, 847

Rock masses

Air-Permeability as Measure of Rock Mass Behavior, 546

End Bearing Capacity of Drilled Shafts in Rock, 579

Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062

Rock mechanics

An Energy Approach to Rock Slope Stability Analysis, 256

Rockfill structures

Relationships for Non-Darcy Flow in Rockfill, 670

Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671

Rocks

Analytic Solutions for Diametral Point Load Strength Tests, 314

Calculating Average Filling Rock Diameter for Gabion-Mattress Channel Design, 760

Riprap Sizing at Toe of Embankment Slopes, 727

Rock Dam Revitalization, 1477

1998 ASCE TRANSACTIONS

Rods

Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077

Roller compacted concrete

Over the Top Concrete, 1414

Roof span

Hovering Over the Harbor, 1452

Roofs

Analysis of Floating Roofs by ODE-Solver Method, 343

Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078

Fall Protection Analysis for Workers on Residential Roofs, 189

FE Analysis of Tucker High School Roof Using Non-linear Geometry and Creep, 1132

Laboratory Tests of Cable-Based Roof Moisture Detection System, 54

Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Santa Fe Sensation, 1450

Rotary inertia

Leipholz Column with Shear and Compressibility, 223

Rotation

Experimental Analysis of Bolted Connections: Snug Versus Preloaded Bolts, 1108

Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Observed and Computed Settlements of Two Shallow Foundations on Sand, 581

Transformation Matrices for Finite and Small Rotations, 251

Roughness

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

Limitations and Proper Use of the Hazen-Williams Equation, 756

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Resistance and Drag Reduction of Flows of Clay Suspensions, 645

Roughness of Loose Rock Riprap on Steep Slopes, 667

Three-Dimensional Numerical Model for Flow through Natural Rivers, 642

Threshold Between Smooth and Wavy Laminar Sheet Flow, 253

Roughness coefficient

Roughness of Loose Rock Riprap on Steep Slopes, 667

Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Route preferences

Investigation on Latent Factors Affecting Route Diversion Intentions, 1242

Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233

Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585

SUBJECT INDEX

Sand

Routes

- Path Planning for a Machine Vision Assisted, Telemated Pavement Crack Sealer, 1212
- Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Routing

- Investigation on Latent Factors Affecting Route Diversion Intentions, 1242
- Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804
- Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805

Rubber

- When the Levee Inflates, 1411

Rubble-mound breakwaters

- Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352
- Progression and Variability of Damage on Rubble Mound Breakwaters, 1356

Runoff

- Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444
- Characterization of Highway Runoff in Austin, Texas, Area, 389
- DEM Based Overland Flow Routing Model, 791
- Effects of Infiltration on Agricultural Runoff Contamination, 478
- Modeling the Nile Basin Under Climatic Change, 803
- Models of Storm Sewers Discharge: 1. Description, 445
- Models of Storm Sewers Discharge: 2. Calibration and Verification, 446
- Theoretical Justification of SCS Method for Runoff Estimation, 892
- Use of Regression Models for Analyzing Highway Stormwater Loads, 493

Runoff forecasting

- Runoff Forecasting Using RBF Networks with OLS Algorithm, 815
- Theoretical Justification of SCS Method for Runoff Estimation, 892

Rural areas

- Modified Pipe Network Model for Incorporating Peak Demand Requirements, 1313
- Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585

Safety

- Crane Safety on Construction Sites, 1557
- Identifying Root Causes of Construction Injuries, 147
- Investigating the Adequacy of Vertical Design Loads for Shoring, 993
- Liability in Designing for Construction Worker Safety, 50
- Psychology of Accident Prevention in the Construction Industry, 924
- Safety Estimation Method for Structures with Cumulative Damage, 351
- Site Safety: Rights, Risks, and Responsibilities, 1455

Safety analysis

- Design and Simulation of Large Breakaway Signs, 1201

- Fall Protection Analysis for Workers on Residential Roofs, 189
- Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221

Safety factors

- Analysis of Safety Indicators in Construction, 177
- Concrete Bridge Demolition Methods and Equipment, 70
- Managing Industrial Construction Safety in Southeast Texas, 192
- Performance of Three-Dimensional Slope Stability Methods in Practice, 623
- Simplified Dynamic Reliability Models for Hydraulic Design, 687

Safety programs

- Crane Safety on Construction Sites, 1557
- Managing Industrial Construction Safety in Southeast Texas, 192

Safety research

- Ordered Probability Modeling of Seat Belt Usage, 1232

Salinity

- Mixing Behavior of Density-Stratified Pools, 680

Salt water

- Impact of Confining Pressure on Long-Term Performance of Chemical Grout in Salt Water, 960

Salt water intrusion

- Hydraulics of "Duckbill" Elastomer Check Valves, 693
- Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800
- Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295
- Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822

Saltation

- Experiments on Saltation of Sand in Water, 764

Sampling

- Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439
- Effect of Variability on End Product Specifications, 156
- Representative Ground Water Monitoring in Fractured Porous Systems, 436
- VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

Sampling designs

- Sampling Design Methods for Water Distribution Model Calibration, 1318
- Sampling Method for Cost Estimation of Highway Noise Barrier Infrastructure, 848

San Francisco

- The San Francisco Connection, 1473

Sand

- Assessment of Liquefaction Potential Using Optimum Seeking Method, 593
- Axial Capacity of Offshore Piles in Dense North Sea Sands, 541
- Bench-Scale Investigation on Vibrorecovery of NAPL Ganglia from Sands, 483
- Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

- Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620
- Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527
- Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571
- Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549
- Effects of Vibration History on Modulus and Damping of Dry Sand, 625
- Experimental Study of Drained Creep Behavior of Sand, 318
- Experiments on Saltation of Sand in Water, 764
- Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554
- Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533
- Leaching Effects on the Properties of Cemented Sands in Kuwait, 618
- Permeation of Sand-Processed Clay Mixtures with Calcium Chloride Solutions, 547
- Pickup Probability for Sediment Entrainment, 675
- Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560
- Properties of Artificially Cemented Carbonate Sand, 572
- Pullout Performance of Inclined Helical Screw Anchors in Sand, 583
- Steady-State Concepts and Static Liquefaction of Silty Sands, 606
- A Unique Critical State for Sand?, 630
- Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540
- Sandwich panels**
- Shear Stiffness for Z-Core Sandwich Panels, 1113
- Sandwich structures**
- Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627
- Sanitary landfills**
- Full-Scale Leachate Treatment Using New Evaporation Technology, 1371
- Satellite mapping**
- Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182
- Satellites**
- Attitude Control of Space Platform Based Tethered Satellite System, 19
- GLONASS Satellite Surveying, 1187
- Stochastic Modeling for Static GPS Baseline Data Processing, 1193
- Three-Dimensional Positioning Using SPOT Stereo Strips with Sparse Control, 1185
- Saturation**
- Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
- Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227
- Scaffolds**
- Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447
- Scale effect**
- 2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819
- Assessment of Scaling Behavior of Regional Floods, 811
- Contaminant Source Solutions with Scale-Dependent Dispersivities, 824
- Linking Hydrodynamic and Water Quality Models with Different Scales, 419
- Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817
- Scale Effect in Pier-Scour Experiments, 723
- Scale models**
- Carriage Position Adjustment of Triangular Running Skyline System, 1067
- Experimental Study of Small Scale Dam Models, 356
- Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739
- Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43
- Performance of Profiled Concrete Shear Panels, 1065
- Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480
- Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133
- Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62
- Small-Scale Accelerated Pavement Testing, 1209
- Scanning electron microscopes**
- Use of Environmental SEM to Study Asphalt-Water Interactions, 967
- Scheduling**
- A Better Way to Estimate and Mitigate Disruption, 197
- Comparison of U.S. Project Delivery Systems, 190
- Determining Schedule Impact: Working Practice, 1404
- Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185
- Linear Scheduling Model: Development of Controlling Activity Path, 171
- Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287
- Methodology for Prioritizing Cost-Effective Construction Technologies, 161
- Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219
- Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292
- Project Delivery Trends: A Contractor's Assessment, 946
- Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173
- Rapid Redocking, 1445
- Resource Leveling of Linear Schedules Using Integer Linear Programming, 168
- Robust Reliability of Projects with Activity-Duration Uncertainty, 154
- Scheduled Departure, 1440
- Scheduling Projects with Repeating Activities, 172
- Simplified Simulation System for Construction Projects, 148
- Simulation-Based Scheduling with Continuous Activity Relationships, 152

SUBJECT INDEX

Scour

- Clear-Water Contraction Scour under Bridges in Pressure Flow, 676
- Determination of Velocity in Estuary for Bridge Scour Computations, 720
- Flow Around Bridge Piers, 681
- Jet Scour in Equilibrium Phase, 697
- Local Scour at Piled Bridge Foundations, 698
- Local Scour at Skewed Piers, 737
- Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664
- Prediction of Live-Bed Scour at Bridge Abutments, 722
- Probabilistic Bridge Scour Estimates, 736
- Scale Effect in Pier-Scour Experiments, 723
- Scouring in Long Contractions, 884
- Three-Dimensional Simulation of Scour-Inducing Flow at Bridge Piers, 708
- Wave Scour Around Group of Vertical Piles, 1351

Screens

- Modeling Well Hydrodynamics, 783

Sea floor

- Application of SASW Method Underwater, 575
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592

Sea level

- Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Sea walls

- Characteristics of Wave Reflection Spectra, 1358

Sea water

- Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730

Sealants

- Sealant Degradation During Crack Sealing of Pavements, 983

Sealing

- Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212

Seals

- Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797
- Significance of Defects in Annular Well Seals, 1368

Seasonal variations

- Mean-Field Rainfall Bias Studies for WSR-88D, 809
- Side Shear Induced in Drilled Shaft by Suction Change, 596

Secondary flow

- Boundary Shear in Rectangular Ducts and Channels, 652
- Design for Hydraulic Geometry of Alluvial Channels, 702
- Side-Weir Flow in Curved Channels, 873

Security

- Project Delivery and the U.S. Dept. of State, 947
- Reducing Vulnerability of Water Supply Systems to Attack, 847

Sediment transport

Sediment

- Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427
- Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400
- Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766
- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Generation of Long-Term Record of Contaminant Transport, 448
- Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327
- Initial Motion of Sediment in Oscillatory Flow, 1331
- Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Sediment control

- Sediment Control at Water Intakes Along Sand-Bed Rivers, 716

Sediment deposits

- Interest in Deposits (available only in Geoenvironmental Special Issue), 1426
- Particle Size Distribution and Metal Content in Street Sediments, 466

Sediment discharge

- Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762
- Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717
- Scouring in Long Contractions, 884

Sediment transport

- Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761
- Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357
- Calculation of Channel and River Velocities, 750
- Drift Velocity Concept for Sediment-Laden Flows, 765
- Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339
- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Effects of Sediment Transport on Bed Friction and Turbulence, 1343
- Estimation of Delta Profile in the Indravati Reservoir, 659
- Incipient Motion of Coarse Particles on a Slope by Regular or Irregular Waves, 1325
- Interest in Deposits (available only in Geoenvironmental Special Issue), 1426
- Laboratory Study of Beach Nourishment Behavior, 1349
- Longshore Sediment Flux in Water Column and Across Surf Zone, 1336
- Matrix Approach to Contaminant Transport Potential, 1377
- Pickup Probability for Sediment Entrainment, 675
- Prandtl's Mixing Length Concept Modified for Equilibrium Sediment-Laden Flows, 742
- Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789
- Stable Width and Depth of Gravel-Bed Rivers with Cohesive Banks, 763

Sediment transport

- Statistics of Sediment Transport in Goodwin Creek, 775
- Upper-Regime Plane Bed, 773
- Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323

Sedimentation

- Initial Settling Rate/Concentration Relationship in Zone Settling, 379
- Interest in Deposits (available only in Geoenvironmental Special Issue), 1426
- Rapid Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999

Sediments

- Particle Size Distribution and Metal Content in Street Sediments, 466

Seepage

- A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827
- Contaminant Source Solutions with Scale-Dependent Dispersivities, 824
- Modified Logarithmic Law for Velocity Distribution Subjected to Upward Seepage, 787
- Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598
- Relationships for Non-Darcy Flow in Rockfill, 670
- Role of Geophysics in Expedited Site Characterization: Case History, 1365
- Solutions of Unsaturated Seepage Problem by Power-Series Method, 813
- Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671
- Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814
- Two Applications of Flow in Porous Media with Threshold Gradient, 801

Segmented elements

- Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056

Seismic analysis

- Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
- Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079
- Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080
- Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
- Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126
- Seismic Analysis of Large-Diameter Flexible Underground Pipes, 619
- Seismic Performance Assessment of Water Delivery Systems, 841

Seismic design

- Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400
- Design Guide for Partially Restrained Composite Connections, 1144
- Detailing for Reinforcement Stability in RC Members, 1093
- Displacement Estimates for Performance-Based Seismic Design, 1123

1998 ASCE TRANSACTIONS

- Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124
- High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175
- Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333
- Period Formulas for Concrete Shear Wall Buildings, 1071
- Proportioning: Missing Step in Model Building Code Seismic Design, 1388
- Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118
- Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76
- Seismic Performance of Confined Sill Plate Connections, 3
- Seismic Performance of High-Strength Concrete Columns, 1052
- Seismic Retrofit Program for Los Angeles Bridges, 849
- Semiactive Control Algorithms for Structures with Variable Dampers, 326
- Solid Footing (available in Geoenvironmental Special Issue only), 1469
- Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280
- Viscous Heating of Fluid Dampers. I: Small-Amplitude Motions, 352
- Viscous Heating of Fluid Dampers. II: Large-Amplitude Motions, 353
- Seismic effects**
 - Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304
 - Seismic Damage Assessment of Steel Frames, 1084
 - Seismic Guidelines for Ports, 1593
- Seismic hazard**
 - Geotechnical Earthquake Engineering and Soil Dynamics III, 1570
 - LQG/LTR Control Methodology in Active Structural Control, 262
- Seismic investigations**
 - Guide to Post-Earthquake Investigation of Lifelines, 1572
- Seismic response**
 - Active Attenuation of Building Structural Response Using Robust Control, 272
 - Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082
 - Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072
 - Cyclic Characterization of Oil Landfill Solid Waste, 544
 - Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
 - Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159
 - Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160
 - Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
 - Earthquake-Induced Displacements of Solid-Waste Landfills, 548

SUBJECT INDEX

- Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077
- Effects of Spatially Varying Ground Motions on Short Bridges, 1128
- Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127
- Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122
- Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372
- National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
- Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029
- Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57
- Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121
- Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032
- Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48
- Seismic Performance of Confined Sill Plate Connections, 3
- Seismic Performance of High-Strength Concrete Columns, 1052
- Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119
- Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120
- Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564
- Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565
- Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345
- Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162
- Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081
- Seismic stability**
- Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
- Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069
- Seismic tests**
- New Seismic Testing Method. I: Fundamental Concepts, 277
- New Seismic Testing Method. II: Proof for MDOF Systems, 278
- Selection**
- Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049
- Comparison of Perception Versus Reality in Timber Bridge Performance, 981
- Contractor Selection Process for Taipei Mass Rapid Transit System, 925
- Guidelines for Quarrystone Armor Units, 194
- Soil Hydraulic Models Selection Based on In-Situ Measurements, 889

Service loads

Semi-rigid connections

- Classification System for Rigid and Semirigid Connections, 1106
- Practical Analysis for Partially Restrained Frame Design, 1105
- Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118
- Sensitivity analysis**
- Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224
- Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467
- Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423
- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829
- Sampling Design Methods for Water Distribution Model Calibration, 1318
- Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Sensors

- Laboratory Tests of Cable-Based Roof Moisture Detection System, 54
- Measuring Droplet Impact Energy with Piezoelectric Film, 878
- Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255
- Modeling the Heat Sense Flowmeter, 871
- New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195
- Optically Powered Electrical Accelerometer and Its Field Testing, 271
- Performance Comparison for Thermal Comfort Sensors, 49
- Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438
- Vibration Control of Flexible Manipulators Using Smart Structures, 28

Separation techniques

- Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513
- Surfactants for Separation Processes: Enhanced Ultrafiltration, 458

Separators

- Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480

Service life

- Concrete Bridge Management: From Design to Maintenance, 1393
- Muscle Made of Carbon Fiber, 1410
- Service-Life Prediction of Deteriorating Concrete Bridges, 1059

Service loads

- Interpretation of Pile Acceptance Criteria from Deficient Data, 622
- Service Load Response of Masonry Arch Bridges, 1026

Serviceability

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845

Settlement analysis

Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638

Effects of Construction on Structures, 1561

Estimation of Municipal Solid Waste Landfill Settlement, 525

Initial Settling Rate/Concentration Relationship in Zone Settling, 379

Interpretation of Plate Load Tests on Residual Soil Site, 605

Interpreting Settlement Profiles of Earth Dams, 611

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Modular Neural Networks for Predicting Settlements During Tunneling, 562

Observed and Computed Settlements of Two Shallow Foundations on Sand, 581

Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560

Properties of Red Mud Tailings Produced under Varying Process Conditions, 404

Rating Adjustment for Settlement of Cutthroat Flumes, 893

Self-Weight Subsidence of Saturated Soft Porous Media, 286

Settlement Behavior of Posttensioned Slabs-on-Grade, 995

Settlement of Embankments on Soft Clays, 551

Settlement of Embankments on Soft Clays, 586

Settling velocity

Assessment of Hindered Settling of Fluid Mudlike Suspensions, 666

Erosion of Fluid Mud Layers. I: Entrainment Model, 8

Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

Sewage sludge

Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394

Sewage treatment

Classification of Flotation Processes in Wastewater Decontamination, 427

Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394

Use of Neural Networks in Design of Coastal Sewage Systems, 699

Sewer design

Use of Neural Networks in Design of Coastal Sewage Systems, 699

Sewer pipes

Microtunneling: An Owner's Perspective, 1391

Sewers

Cliffside Correction, 1485

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

General Hydrodynamic Model for Sewer/Channel Network Systems, 683

Optimization Modeling for Sewer Network Management, 187

Urban Wet-Weather Flow Management: Research Directions, 1299

Shafts

Numerical Studies on Recent Large High-Rise Buildings Fire, 44

Shake table tests

Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621

New Seismic Testing Method. I: Fundamental Concepts, 277

New Seismic Testing Method. II: Proof for MDOF Systems, 278

Shallow foundations

Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569

Interpretation of Plate Load Tests on Residual Soil Site, 605

Observed and Computed Settlements of Two Shallow Foundations on Sand, 581

Shallow water

High-Resolution Finite-Volume Method for Shallow Water Flows, 718

Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 733

Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332

Numerical Modeling of Tidal Wave Runup, 1342

Particle Model for Simulating Flow Over Large Areas, 712

Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789

Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323

Shape

Axially Loaded Concrete-Filled Steel Tubes, 1146

Evolution of Optimum Shapes Using Genetic Algorithm, 1167

Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798

Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076

Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713

Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166

Shape memory effect

Smart Prestressing with Shape-Memory Alloy, 342

Sharp-crested weirs

Side-Weir Flow in Curved Channels, 873

Shear

Castellated Beam Web Buckling in Shear, 1154

Deflection of Steel-Concrete Composite Beams with Partial Shear Interaction, 1149

Leipholz Column with Shear and Compressibility, 223

SUBJECT INDEX

- NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505
- Overlooked Assumption in Nonconstrained Post Embedment, 1387
- Shear Stiffness for Z-Core Sandwich Panels, 1113
- Stresses and Crack Angles in Concrete Membrane Elements, 1179
- Shear deformation**
- Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211
- Nonlinear Analysis of Composite Beams with Deformable Shear Connectors, 1148
- Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
- Shear failure**
- Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
- Shear forces**
- Design of Wood Diaphragm with Openings, 1116
- Shear modulus**
- Dynamic Properties of Sherman Island Peat, 524
- Effects of Vibration History on Modulus and Damping of Dry Sand, 625
- Energy-Injecting Virtual Mass Resonant Column System, 566
- Shear Modulus and Damping Relationships for Gravels, 563
- Shear resistance**
- Recent Approaches to Shear Design of Structural Concrete, 1172
- Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140
- Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141
- Shear strain**
- Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333
- Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560
- Shear Modulus and Damping Relationships for Gravels, 563
- Shear strength**
- Analysis of Cone Resistance: Review of Methods, 538
- Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138
- Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571
- Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528
- Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772
- Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
- Internal Shear Strength of Three Geosynthetic Clay Liners, 612
- Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094
- Performance of Profiled Concrete Shear Panels, 1065
- Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567
- Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075

Shell structures

- Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
- Side Shear Induced in Drilled Shaft by Suction Change, 596
- Slope Stability Analyses in Stiff Fissured Clays, 14
- Slope Stability of Geosynthetic Clay Liner Test Plots, 584
- Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173
- Strength of Plate Girder Web Panels under Pure Shear, 1045
- Uncertainty in Back Analysis of Slopes: Kettleman Hills Case History, 634
- Using a Programmable Calculator to Find ϕV_u for Steel Beams, 1395
- Shear stress**
- Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861
- Effects of Particle Size and Bulk Density on Erosion of Quartz Particles, 790
- Effects of Sediment Transport on Bed Friction and Turbulence, 1343
- Generalized Warping Torsion Formulation, 249
- Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327
- Interface Behavior in Steel Fiber/Cement Composites under Tension, 332
- Shear Stress around Vertical Wall Abutments, 744
- Shear tests**
- Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112
- Internal Shear Strength of Three Geosynthetic Clay Liners, 612
- Shear walls**
- Comparison of Static and Dynamic Response of Timber Shear Walls, 1100
- Continuum Model for Masonry: Parameter Estimation and Validation, 1095
- Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
- FE Model of Steel Plate Shear Wall, 1038
- Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058
- Period Formulas for Concrete Shear Wall Buildings, 1071
- Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121
- Sheet metal**
- Axial and Bending Behavior of Composite Walling, 1107
- Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112
- Sheet piles**
- Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533
- Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598
- Sheets**
- Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958
- Shell structures**
- Applications of FEM on Free and Forced Vibration of Laminated Shells, 204

Shell structures

- Thermal Analysis of Reinforced-Concrete Shells, 1036
- Tire Contact Using Two-Dimensional Finite Elements, 250

Shells

- Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200

Ships

- Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186
- Latticed Mast Structures, 1047
- Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182

Shoaling

- Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335
- Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Shock waves

- Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777

- Supercritical Flow in Chute Contraction, 647

Shopping centers

- Integrated Modeling of Urban Shopping Activities, 1278

Shoreline changes

- Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339
- Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323

Shores

- Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182

Shoring

- Investigating the Adequacy of Vertical Design Loads for Shoring, 993

Shredding

- Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624

Shrinkage

- Bridge Prestress Losses in Dry Climate, 69
- Constitutive Modeling of Unsaturated Drying Deformable Materials, 289

- FE Analysis of Tucker High School Roof Using Non-linear Geometry and Creep, 1132

- Shrinkage Cracking of Restrained Concrete Slabs, 301

Shrinkage cracking

- Shrinkage Cracking of Restrained Concrete Slabs, 301

Sight distances

- Aspects of Stopping-Sight Distance on Crest Vertical Curves, 1239
- Design Considerations of Sight Distance Red Zones on Crest Curves, 1240
- Design of Sag Vertical Curves in Three-Dimensional Alignments, 1200
- Design Requirements of Equal-Arc Unsymmetrical Vertical Curves, 1247
- Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224
- Model for Sight Distance Analysis of Uncontrolled Intersections, 1215

1998 ASCE TRANSACTIONS

- New Model for Passing Sight Distance on Two-Lane Highways, 1263

- Three-Arc Vertical Curve for Constrained Highway Alignments, 1216

Signal supports

- Design and Simulation of Large Breakaway Signs, 1201

Signal processing

- Introduction to Discrete Signals and Inverse Problems in Civil Engineering, 1579

Signalized intersections

- Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225

- Modified Delay Equations for Permitted Left Turns, 1241

- Simulation Model for Analyzing SPUD with Actuated Signals, 1250

- System to Identify Turning Movements at Signalized Intersections, 1271

- Utilization of Double Left-Turn Lanes with Downstream Land Reductions, 1226

Signals

- Introduction to Discrete Signals and Inverse Problems in Civil Engineering, 1579

Signs

- Design and Simulation of Large Breakaway Signs, 1201

Silica

- Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978

- Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473

- Quantity of Alkali Silica Gel and Its Effect on Concrete Properties, 964

Silos

- Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638

Silts

- Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571

- Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Silty loams

- Influence of Water Content on SVE in a Silt Loam Soil, 500

Simple shear tests

- Cyclic Characterization of Oil Landfill Solid Waste, 544

- Damping at Small Strains in Cyclic Simple Shear Test, 580

- Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528

Simulation

- Comment on the Overall Thermal Transfer Value (OTTV) for Building Energy Control, 56

- Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118

- Effect of Trimming on LP III Flood Quantile Estimates, 795

- Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236

SUBJECT INDEX

- Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711
- Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219
- Reservoir Operation Studies of Sabarmati System, India, 1285
- Simplified Simulation System for Construction Projects, 148
- Simulation Modeling and Management of a Large Basement Construction Project, 100
- Simulation of Stationary Non-Gaussian Translation Processes, 220
- Simulation-Based Scheduling with Continuous Activity Relationships, 152
- Streamline Upwind Finite-Element Method for Overland Flow, 689
- Susceptibility of Water Supply Reservoirs to Drought Conditions, 808
- Synthesizing Ensembles of Spatially Correlated Accelerograms, 349
- Simulation models**
 - Airport Modeling and Simulation, 1543
 - Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
 - Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225
 - Dynamic Optimal Control of In-Situ Bioremediation of Ground Water, 1297
 - Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197
 - Simulation Model for Analyzing SPUDI with Actuated Signals, 1250
- Singapore**
 - Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Sinuosity**
 - Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644
- Site evaluation**
 - Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
 - Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417
- Site investigation**
 - Alaska's Last Link, 1536
 - Application of SASW Method Underwater, 575
 - Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
 - Geophysical Exploration for Engineering and Environmental Investigations, 1568
 - Geotechnical Earthquake Engineering and Soil Dynamics III, 1570
 - Robotics 98, 1592
 - Role of Geophysics in Expedited Site Characterization: Case History, 1365
 - Site Characterization and Containment Assessment with Dissolved Gases, 442
 - Site Investigations of Fuel Spill Migration into Permafrost, 85
- Site preparation, construction**
 - Preparing for Pier A, 1482
 - Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Sliding

Site selection

- Decision Support System for Residential Land Development Site Selection Process, 52
- Design of Municipal Wastewater Treatment Plants, 1560
- Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244
- Location of Recycling Depots with GIS, 1277
- Size**
 - Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717
 - Business Failures: Liabilities of Newness, Adolescence, and Smallness, 193
 - Riprap Sizing at Toe of Embankment Slopes, 727
 - Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166
 - Small Firms, Big Advantages, 1515

Size effect

- Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213
- Calibration Chamber Size Effects on Penetration Resistance In Sand, 607
- Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766
- Effect of Size Gradation on Transport of Sediment Mixtures, 740
- Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364
- Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365

Skewness

- Local Scour at Skewed Piers, 737

Slabs

- Early Form Removal of Reinforced Concrete Slabs, 1390
- Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127
- Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Settlement Behavior of Posttensioned Slabs-on-Grade, 995
- Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140
- Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141
- Slag**
 - Effect of GGBFS Particle-Size Distribution on Mortar Compressive Strength, 975
 - Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Slenderness ratio

- Effect of Column Parameters on FRP-Confined Concrete, 136
- Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150

Sliding

- Dynamics of Rigid Block Due to Horizontal Ground Motion, 294
- An Energy Approach to Rock Slope Stability Analysis, 256

Sliding

Reliability Characteristics of a Platform in the Mississippi River Delta, 592

Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173

Slip

Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244

Slope stability

Case Study of Slope Failures at Spilmans Island, 626

An Energy Approach to Rock Slope Stability Analysis, 256

Limit Analysis Versus Limit Equilibrium for Slope Stability, 523

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Performance of Three-Dimensional Slope Stability Methods in Practice, 623

A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632

Slope Reliability Analysis Using Generalized Method of Slices, 559

Slope Stability Analyses in Stiff Fissured Clays, 14

Slope Stability of Geosynthetic Clay Liner Test Plots, 584

Uncertainty in Back Analysis of Slopes: Kettleman Hills Case History, 634

Slope stabilization

Stability of Natural Slopes in the Coastal Plain, 1598

Slopes

Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861

Extending the Period of Data Retrieval for Vertical Inclinomeres, 569

Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738

Friction Slope in Depth-Averaged Flow, 651

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

Riprap Sizing at Toe of Embankment Slopes, 727

Roughness of Loose Rock Riprap on Steep Slopes, 667

Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344

Sloshing

Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225

Slots

Discharge Equation for Rectangular Slots, 759

Sludge

Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380

Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401

Sludge's Re-Treat, 1524

Sludge treatment

Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474

1998 ASCE TRANSACTIONS

Slurry trenches

Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594

Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627

Slurry walls

Boundary Conditions for Modeling Transport in Vertical Barriers, 511

Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574

Nonequilibrium Sorption in Soil/Bentonite Barriers, 411

Smoke control

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

Snow loads

Combining Snow and Earthquake Loads for Limit States Design, 10

Social impact

A Corps Chief Looks at "Rising Tide", 1418

Social organization

Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900

Social values

Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023

Soft soils

Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344

Jet Grouting: New Directions, 1484

Tough Conditions, Innovative Solutions, 1438

Soil cement

Cementing the Future, 1531

Soil dynamics

Application of SASW Method Underwater, 575

Geotechnical Earthquake Engineering and Soil Dynamics III, 1570

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Soil erosion

Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861

Soil gas

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Soil improvement

Geotechnical Earthquake Engineering and Soil Dynamics III, 1570

Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639

Pullout Resistance of High-Voltage Strengthened Ground Anchors, 603

Soil Improvement for Big Digs, 1594

Soil investigations

Losing Ground, 1443

Soil layers

Method to Estimate Water Storage Capacity of Capillary Barriers, 553

SUBJECT INDEX

Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

Soil mechanics

Karl Terzaghi: The Engineer as Artist, 1580

Martian and Lunar Cold Region Soil Mechanics Considerations, 35

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Slope Stability Analyses in Stiff Fissured Clays, 14

Soil pollution

Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513

Effects of TNT and Its Metabolites on Anaerobic TNT Degradation, 453

Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373

Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378

Laboratory Study of Soil Flushing by Aqueous Solutions, 617

Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512

Metal Ion Leaching from Contaminated Soils: Model Development, 407

Oil in the Soil, 1523

Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

Washing of Various Lead Compounds from a Contaminated Soil Column, 503

Soil pressure

Overlooked Assumption in Nonconstrained Post Embedment, 1387

Soil properties

Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561

In-Situ Determination of Soil Stiffness and Damping, 590

Leaching Effects on the Properties of Cemented Sands in Kuwait, 618

Limit Analysis Versus Limit Equilibrium for Slope Stability, 523

Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879

Soil stability

Losing Ground, 1443

Soil stabilization

Preparing for Pier A, 1482

Tough Conditions, Innovative Solutions, 1438

Soil stresses

Infiltration Model for Furrow Irrigation, 860

Soil structure

Fractal Model for Flow Through Saturated Soils, 529

Soil suction

Side Shear Induced in Drilled Shaft by Suction Change, 596

Soil swelling

Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997

Soils, unsaturated

Soil tests

Energy-Injecting Virtual Mass Resonant Column System, 566

Soil treatment

Bench-Scale Investigation on Vibrorecovery of NAPL Ganglia from Sands, 483

Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513

Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514

Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492

Soil water

Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601

Infiltration Model for Furrow Irrigation, 860

Refining the Definition of Field Capacity in the Literature, 880

Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540

VOC Vapor Sorption in Soil: Soil Type Dependent Model and Implications for Vapor Extraction, 391

Soil-pile interaction

Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072

Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577

Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554

Soil-pipe interaction

Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828

Soils

Contaminated Soil Management at Construction Sites, 1376

Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601

Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569

Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628

Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380

Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627

Soil Bioengineering Takes Root, 1474

Soil Hydraulic Models Selection Based on In-Situ Measurements, 889

Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418

Soils, saturated

System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408

Soils, unsaturated

Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367

Estimation of Biokinetic Parameters for Unsaturated Soils, 490

Side Shear Induced in Drilled Shaft by Suction Change, 596

Solutions of Unsaturated Seepage Problem by Power-Series Method, 813

Soils, unsaturated

Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814

Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870

Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6

Soil-structure interaction

Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072

Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594

Elastic Analysis of Buried Pipes under Surface Patch Loadings, 591

In-Situ Determination of Soil Stiffness and Damping, 590

New Type of Bottom Protection in Harbors—Design Method, 1347

Observed and Computed Settlements of Two Shallow Foundations on Sand, 581

Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032

Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537

Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616

Solar radiation

Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409

Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410

Solid waste management

Fly Ash Binders in the Stabilization of FGD Wastes, 380

Management of Solid Waste from Abrasive Blasting, 1369

Materials Balance for Municipal Solid-Waste Management, 383

Rebuilding Bosnia, 1419

Solid wastes

Alternative Use of Multimed Model for Subtitle D Landfill Applications, 1386

Cyclic Characterization of Oil Landfill Solid Waste, 544

Decomposition of Specific Materials Buried within Sanitary Landfills, 518

Derivation of Mean Cell Residence Time Formula, 428

Dynamic Properties of Solid Waste Based on Back-Analysis of Oil Landfill, 545

Earthquake-Induced Displacements of Solid-Waste Landfills, 548

Effects of Moisture on Pyrolysis of Polypropylene, 482

Estimation of Municipal Solid Waste Landfill Settlement, 525

Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414

Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363

Time Series Analysis of Municipal Solid Waste Generation Rates, 395

Solidification

Fly Ash Binders in the Stabilization of FGD Wastes, 380

1998 ASCE TRANSACTIONS

Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383

Low-Level and Mixed Radioactive Waste In-Drum Solidification, 1361

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Solids

Analytic Solutions for Diametral Point Load Strength Tests, 314

Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489

Solids flow

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Solitary wave

Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735

Solitary Waves in Flexible, Arbitrary Elastic Helix, 324

Solutes

Improved Finite-Analytic Methods for Steady-State Transport Problems, 690

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820

Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388

Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438

Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870

Solvents

VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

Sorption

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388

Nonequilibrium Sorption in Soil/Bentonite Barriers, 411

Permeability and Sorption Properties of Mature Near-Surface Concrete, 953

VOC Vapor Sorption in Soil: Soil Type Dependent Model and Implications for Vapor Extraction, 391

Space colonies

Construction Engineering Approach for Lunar Base Development, 34

Space exploration

Lunar Polar Ice: Implications for Lunar Development, 33

Role of Lunar Development in Human Exploration of the Solar System, 30

Space 98, 1596

Space probes

Martian and Lunar Cold Region Soil Mechanics Considerations, 35

Space stations

Space 98, 1596

SUBJECT INDEX

Space structures

Attitude Control of Space Platform Based Tethered Satellite System, 19

Space truss

High-Performance Powder, 1407

Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101

Spacecraft

Role of Launch Vehicles in Moon-Mars Exploration Program, 32

Spacing

Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054

Theory of Pipe Drainage Assisted by Mole Drainage, 864

Wave Scour Around Group of Vertical Piles, 1351

Spalling

Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174

Investigation of Joint Spalling on a Concrete Runway, 989

Joint Spalling in Newly Constructed Concrete Pavements, 1004

Securing the Stone, 1412

Spatial analysis

Application of SASW Method Underwater, 575

Effects of Spatially Varying Ground Motions on Short Bridges, 1128

Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300

Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273

Spatial Liquefaction Analysis System, 96

Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879

Synthesizing Ensembles of Spatially Correlated Accelerograms, 349

Spatial data

Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291

Developing Small Area Network Planning Models Using Desktop GIS, 1275

Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861

Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792

Representative Ground Water Monitoring in Fractured Porous Systems, 436

Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865

Spatial distribution

Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776

Modeling Spatial Variability of Rainfall Over a Catchment, 806

Spatial Variations in Travel Behavior within Greater Toronto Area, 1218

Specifications

Capacity of Thin-Walled I-Section Beam-Columns, 1063

Identifying Component Variability of End Product Specification Tests, 155

Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155

Performance-Related Specifications for Highway Construction, 142

Practical Analysis for Partially Restrained Frame Design, 1105

Specifications for Structural Steel Beams with Web Openings, 1597

Using a Programmable Calculator to Find ϕV_n for Steel Beams, 1395

Spectra

Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582

Characteristics of Wave Reflection Spectra, 1358

Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124

Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345

Synthesizing Ensembles of Spatially Correlated Accelerograms, 349

Spectral analysis

Automated Inversion Procedure for Spectral Analysis of Surface Waves, 595

Identification of Dynamic Properties of Oil Landfill, 543

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032

Spectral Green's Dyadic for Point Sources in Poroelastic Media, 207

Spectral Identification of Nonlinear Structural Systems, 296

Spectral Modeling of Nonlinear Dispersive Waves, 641

Spectral density function

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Speeches

Speak Out: The Engineer as Communicator, 908

Speed

Finite-Element Analyses of Flexible Pavements, 1258

Superelevation, Side Friction, and Roadway Consistency, 1249

Technology Readiness and Development Risks of New Supersonic Transport, 29

Speed changes

Transient Analysis with Time-Decoupled Pumping Station, 682

Speed control

Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202

Spheres

A Museum for the Heavens, 1456

Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Spills

Spills

Site Investigations of Fuel Spill Migration into Permafrost, 85

Spillways

Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

Over the Top Concrete, 1414

Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726

Splicing

Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79

Splitting

Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138

Spreadsheets

Materials Balance for Municipal Solid-Waste Management, 383

Slope Reliability Analysis Using Generalized Method of Slices, 559

Stability

Base Stability of Deep Excavation in Anisotropic Soft Clay, 600

Buckling of Unilaterally Constrained Infinite Plates, 221

Calculating Average Filling Rock Diameter for Gabion-Mattress Channel Design, 760

Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299

Detailing for Reinforcement Stability in RC Members, 1093

Dynamic Instability of Laminates Subjected to Temperature Field, 347

Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333

Lateral Extrusion Analysis of Sandwiched Weak Soil in Slurry Trench, 627

Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155

Leipholtz Column with Shear and Compressibility, 223

Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305

On Stability of Multitime Step Integration Procedures, 303

Short-Wave Behavior of Long-Wave Equations, 1350

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Stability analysis

An Energy Approach to Rock Slope Stability Analysis, 256

New Type of Bottom Protection in Harbors—Design Method, 1347

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Stabilization

Fly Ash Binders in the Stabilization of FGD Wastes, 380

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383

Riprap Sizing at Toe of Embankment Slopes, 727

River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328

Salvaging Streams, 1475

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Variational Problem of Water-Level Stabilization in Open Channels, 646

Stadiums

Baseball Caps, 1533

Stainless steel

Downtown Goes Uptown in Stainless Steel, 1416

Standard deviation

Using Object-Communication for Design Standards Modeling, 105

Standard penetration tests

Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560

Standards

Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049

Developing Standards and International Standards Organizations, 932

Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573

Hybrid Environment for Standards Processing, 107

Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Michigan's Commercial Driver's License (CDL) Experience, 1217

Standards Modeling Language, 102

Statewide Standardization of Site Improvement Standards, 1279

Standing waves

Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357

State agencies

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

TQM Implementation in State Departments of Transportation: View from the Firing Line, 902

State-of-the-art reviews

Freight Pipelines: Current Status and Anticipated Future Use, 1235

Implementation of Robotics in Building: Current Status and Future Prospects, 143

Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589

Structural Ice Control: A Review, 82

Static loads

Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528

Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309

Static tests

Comparison of Static and Dynamic Response of Timber Shear Walls, 1100

Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092

Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129

SUBJECT INDEX

Steel frames

Statics

Leaning-Structure Statics—Flying Buttresses and Mayan Vault Ceilings, 45

Stationary response

Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206

Statistical analysis

Analysis of Reaeration Equations Using Mean Multiplicative Error, 386

Estimation of Gravel-Bed River Flow Resistance, 769

Estimation of Long Return Period Design Values for Wind Speeds, 239

Progression and Variability of Damage on Rubble Mound Breakwaters, 1356

Time Series Analysis of Municipal Solid Waste Generation Rates, 395

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Statistical distributions

Actions for Verification of RC Structures with FRP Bars, 132

Statistical inference

Estimation of Long Return Period Design Values for Wind Speeds, 239

Statistical models

Design Fee Versus Design Deficiency, 41

Statistics

Statistics of Sediment Transport in Goodwin Creek, 775

Steady flow

Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894

End Depth in Circular Channels, 748

Hydraulics of Open Channel Flow, 1575

An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326

Steady state

Improved Finite-Analytic Methods for Steady-State Transport Problems, 690

Linear Representation of Steady-State Line for Sand, 640

Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Steam stripping

Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418

Steel

Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054

Axial and Bending Behavior of Composite Walling, 1107

Baseball Caps, 1533

Bolted Connection Tests of Thin G550 and G300 Sheet Steels, 1112

Bridge Fatigue Life Estimation From Field Data, 1399

Castellated Beam Web Buckling in Shear, 1154

Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

Early Form Removal of Reinforced Concrete Slabs, 1390

FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145

General Creep-Time Equation, 966

Ground Attack, 1406

Influence of Service Cracking on Reinforcement Steel Corrosion, 952

Laboratory Tests of Bolted Diaphragm-Girder Connections, 63

Mechanical Properties of Low-Yield Point Steels, 970

Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056

Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044

Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010

Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092

Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153

Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000

Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121

Shear Stiffness for Z-Core Sandwich Panels, 1113

Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840

Steel beams

Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155

Pendulum Impact Tests on Steel W-Beam Guardrails, 1237

Using a Programmable Calculator to Find ϕV_n for Steel Beams, 1395

Steel columns

Axially Loaded Concrete-Filled Steel Tubes, 1146

FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163

Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042

Steel construction

Making the Grade, 1446

Steel decks

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159

Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160

Steel fibers

Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098

Flexural Behavior of Steel Fiber Reinforced Concrete, 962

Interface Behavior in Steel Fiber/Cement Composites under Tension, 332

Steel frames

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

Classification System for Rigid and Semirigid Connections, 1106

Coldhearted Building, 1500

Steel frames

- Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082
- Domesticating Steel, 1408
- Framing a Work of Art, 1429
- Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122
- National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
- Nonlinear Structural Control Using Neural Networks, 247
- Practical Analysis for Partially Restrained Frame Design, 1105
- Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013
- Response of Semi-rigid Steel Frames to Cyclic and Earthquake Loads, 1118
- Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Seismic Damage Assessment of Steel Frames, 1084
- Stress-Resultant Plasticity for Frame Structures, 371
- Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames, 1009
- Summary of SAC Case Study Building Analyses, 1012
- Test of Welded Beam-to-Column Subassemblages. I: Global Behavior, 1157
- Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Steel pipes

- Axial Capacity of Offshore Piles in Dense North Sea Sands, 541
- Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240

Steel plates

- Cyclic Elastoplastic Large Deflection Analysis of Thin Steel Plates, 252
- Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
- FE Model of Steel Plate Shear Wall, 1038
- Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
- Through-Thickness Properties of Structural Steels, 1104
- Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050

Steel structures

- Design Guidelines for Longitudinal Plate to HSS Connections, 1110
- Design of Latticed Steel Transmission Structures, 1559
- Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121
- Fatigue Strength of Riveted Connections, 1111
- Quantity Estimating of Building with Logarithm-Neuron Networks, 184

Stiffeners

- Cold-Formed Steel Members with Multiple Longitudinal Intermediate Stiffeners, 1151
- Shear Stiffness for Z-Core Sandwich Panels, 1113

Stiffening

- Flutter Stability of Very Long Suspension Bridges, 72
- Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050

1998 ASCE TRANSACTIONS

Stiffness

- Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258
- Exact Analysis of Nonprismatic Beams, 361
- Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639
- Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234
- Properties of Artificially Cemented Carbonate Sand, 572
- Shear Stiffness for Z-Core Sandwich Panels, 1113
- Tensile Properties of Geogrids Under Cyclic Loadings, 597

Stiffness methods

- In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308

Stilling basins

- Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706
- Spatial B-Jump at Sudden Channel Enlargements with Abrupt Drop, 724

Stirrups

- Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137

Stochastic models

- Optimal Operation of South Indian Irrigation Systems, 1309
- Stochastic Modeling for Static GPS Baseline Data Processing, 1193
- Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810
- Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417
- Time Series Analysis of Municipal Solid Waste Generation Rates, 395

Stochastic processes

- Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206
- Kriging of Lognormal Stochastic Field, 348
- Lagrangian/Eulerian Description of Dynamic System, 317
- Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823
- Process Noise and Optimum Observation in Conditional Stochastic Fields, 366
- Stochastic Analysis of Load Combination, 320
- Stochastic Approach to Delineating Wellhead Protection Areas, 1302

Stones

- Guidelines for Quarystone Armor Units, 194
- Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971

Storage

- Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Storage tanks

- Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997
- Out of Sight, Out of Time, 1431
- Pump-and-Treat Rescue, 1432

SUBJECT INDEX

Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069

Storm runoff

Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479

Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15

Performance of Vegetative Controls for Treating Highway Runoff, 509

Storm sewers

Models of Storm Sewers Discharge: 1. Description, 445

Models of Storm Sewers Discharge: 2. Calibration and Verification, 446

Storm surges

Determination of Velocity in Estuary for Bridge Scour Computations, 720

Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Storms

Probabilistic Bridge Scour Estimates, 736

Stormwater

Characterization of Highway Runoff in Austin, Texas, Area, 389

Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375

Models of Storm Sewers Discharge: 1. Description, 445

Models of Storm Sewers Discharge: 2. Calibration and Verification, 446

Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Urban Wet-Weather Flow Management: Research Directions, 1299

Stormwater management

Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

Hydraulics of "Duckbill" Elastomer Check Valves, 693

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Water Resources and the Urban Environment, 1607

Wetland Wonder, 1535

Strain

Comparing Two Algorithms to Add Large Strains to Small-Strain FE Code, 321

Confined Concrete Subjected to Uniaxial Monotonic Loading, 363

FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163

Four-Stage Model for Predicting Creep Behavior, 219

Pavement Strain from Moving Dynamic 3D Load Distribution, 1265

Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243

Solutions of Multilayer Inclusion Problems Under Uniform Field, 231

Theoretical and Experimental Investigation of Helical Cardiac Leads, 214

Strain distribution

Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255

Tests of Welded Beam-to-Column Subassemblages. II: Detailed Behavior, 1158

Strain gages

Lateral Load Behavior of Full-Scale Pile Group in Clay, 570

Not Your Father's Strain Gauge, 1480

Strain rate

Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282

Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283

Steady-State Concepts and Static Liquefaction of Silty Sands, 606

Strain softening

A Unique Critical State for Sand?, 630

Strategic planning

Discovering Your Niche, 1537

Marketing is Everyone's Job, 1527

Stratification

Dynamics of Temperature Stratification in Lowland Rivers, 770

Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294

Stratified flow

Modeling Density and Turbulence in Stratified Tidal Medium, 662

Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730

Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731

Stream gaging

Stream Gauging of Torrential Rivers of Eastern Eritrea, 816

Stream gaging station

Stream Gauging of Torrential Rivers of Eastern Eritrea, 816

Streamflow

Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812

Generation of Long-Term Record of Contaminant Transport, 448

Streamflow forecasting

Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818

Streams

Apparatus for Streaming Potential Measurements on Granular Filter Media, 522

Chemical Reactions and Gas Transfer in Natural Waters, 384

Depth Probability Distributions in Stream Reaches, 673

Hydraulic Estimation of Dispersion Coefficient for Streams, 684

In-Stream Hollow-Fiber Membrane Aeration, 715

Predicting Longitudinal Dispersion Coefficient in Natural Streams, 643

Streams

Streams

- Salvaging Streams, 1475
Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409
Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410
Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

Streets

- Particle Size Distribution and Metal Content in Street Sediments, 466

Strength

- Base Stability of Deep Excavation in Anisotropic Soft Clay, 600
Capacity of Thin-Walled I-Section Beam-Columns, 1063
Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125
Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527
Design Guide for Partially Restrained Composite Connections, 1144
Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
Design of Lipped Channel Columns, 1040
Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115
Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214
Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639
Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965
Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951
Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
Model of Concrete Confined by Fiber Composites, 1137
Modeling Concrete Strength with Augment-Neuron Networks, 985
Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044
Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978
Properties of Artificially Cemented Carbonate Sand, 572
Strength and Deformability of Wood beneath Bolted Connectors, 1046
Strengthening of Masonry Structures Using Epoxy-Bonded FRP Laminates, 124
Tensile Properties of Geogrids Under Cyclic Loadings, 597
Tension Control Bolts: Strength and Installation, 58
Transmission of Interior Concrete Column Loads through Floors, 1091
Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050

Stress

- Analysis of Rotating Crack Model, 310
Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226
Confined Concrete Subjected to Uniaxial Monotonic Loading, 363

1998 ASCE TRANSACTIONS

- Effective Temperature Differential in Concrete Pavements, 1208
Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236
Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234
Four-Stage Model for Predicting Creep Behavior, 219
Hyperbolic Cooling Towers with Bulge Imperfections, 359
Nose-Deck Interaction in Launched Prestressed Concrete Bridges, 59
Rotating Crack Model with Transition to Scalar Damage, 242
Solutions of Multilayer Inclusion Problems Under Uniform Field, 231
Stresses and Crack Angles in Concrete Membrane Elements, 1179
Stress-Resultant Plasticity for Frame Structures, 371
Temperature and Curling Stress in Concrete Pavements: Analytical Solutions, 1205
A Unique Critical State for Sand?, 630

Stress analysis

- Analysis of Floating Roofs by ODE-Solver Method, 343
Elastic Subsurface Stress Analysis for Circular Foundations. I, 274
Elastic Subsurface Stress Analysis for Circular Foundations. II, 275

Stress concentration

- Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244
Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068
Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066

Stress distribution

- Effect of Transition Aone on Elastic Stresses in Concrete Materials, 987
Pavement Strain from Moving Dynamic 3D Load Distribution, 1265
Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774
Stress Distribution at PTFE Interface in Cylindrical Bearing, 77

Stress intensity factor

- Stress Intensity Factors and Displacements in Elastic Contact and Crack Problems, 327

Stress measurement

- Tire Contact Using Two-Dimensional Finite Elements, 250

Stress strain characteristics

- Model Prediction of Rutting in Asphalt Concrete, 1254

Stress strain relations

- Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027
Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293
High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370
Solitary Waves in Flexible, Arbitrary Elastic Helix, 324

SUBJECT INDEX

Stress strain relations, soils

Stress-Strain-Time Function of Clay, 552

Stress waves

Analysis and Experiments on Stress Waves in Planar Trusses, 315

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Stress-strain curves

Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135

Structural analysis

Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392

Application of Geotechnical Principles in Pavement Engineering, 1544

Continuum Model for Masonry: Parameter Estimation and Validation, 1095

Effective Torsional Constant for Restrained Open Section, 1171

Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309

Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121

Modeling of Subsurface Pulsed Radar for Nondestructive Testing of Structures, 976

Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076

Recursive Formulation of Force Method Programmed in Logic, 93

Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129

The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Structural Identification: Analytical Aspects, 1114

Summary of SAC Case Study Building Analyses, 1012

Structural behavior

Behavior of Cross-Bracing in Latticed Towers, 1064

Cable Stay Conundrum, 1488

Capacity of Masonry Arches and Spatial Frames, 1096

Effects of Construction on Structures, 1561

Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123

Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101

Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121

Seismic Behavior of Steel Pile to Precast Concrete Cap Beam Connections, 76

Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119

Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120

Structural Behavior of Composite RC Beams with Externally Bonded CFRP, 130

Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162

Structural control

Active Attenuation of Building Structural Response Using Robust Control, 272

Active Control of Tensegrity Systems, 21

Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23

LQG/LTR Control Methodology in Active Structural Control, 262

Nonlinear Structural Control Using Neural Networks, 247

A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212

Structural design

Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392

Comparison of BS 5950 and AISC-LRFD Codes of Practice, 1396

Continuum Topology Optimization for Concept Design of Frame Bracing Systems, 1085

Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Evolution of Optimum Shapes Using Genetic Algorithm, 1167

Guide to Structural Optimization, 2

Multicriteria Optimization for Design of Structures with Active Control, 22

The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13

Structural dynamics

Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335

On Stability of Multistep Integration Procedures, 303

Semiactive Control Algorithms for Structures with Variable Dampers, 326

Structural elements

Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574

Stresses and Crack Angles in Concrete Membrane Elements, 1179

Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360

Unified Finite Difference Formulation for Free Vibration of Cables, 1165

Using Object-Communication for Design Standards Modeling, 105

Structural engineering

Framing a Work of Art, 1429

Structural failures

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

New Seismic Testing Method. I: Fundamental Concepts, 277

New Seismic Testing Method. II: Proof for MDOF Systems, 278

Safety Estimation Method for Structures with Cumulative Damage, 351

Structural materials

Framework for Modeling Durability Cost of Structural Systems, 842

Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170

Structural members

Axial Fatigue Performance of Cold-Formed Steel Sections, 1041

Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122

Structural members

- Detailing for Reinforcement Stability in RC Members, 1093
- Effective Torsional Constant for Restrained Open Section, 1171
- Fatigue Strength of Riveted Connections, 1111
- Interference Assemblies, 209
- Mechanical Properties of Low-Yield Point Steels, 970
- Recent Approaches to Shear Design of Structural Concrete, 1172
- Ultrasonic Techniques to Characterize Pultruded Composite Members, 129

Structural models

- Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263
- Updating Models and Their Uncertainties. Part II: Model Identifiability, 264

Structural reliability

- Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073
- Improved Procedures for Structural Integrity Evaluation of Bridges, 831
- Probabilistic Bridge Scour Estimates, 736
- Reliability Assessment of High-Strength Concrete Columns, 273
- Reliability Assessment of Pile-Supported Structural Systems, 1033
- Reliability Characteristics of a Platform in the Mississippi River Delta, 592
- Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311
- Reliability of Transmission Structures Including Nonlinear Effects, 1130
- Wind Tunnel Studies of Buildings and Structures, 1610

Structural response

- Damage Identification Through Regularization Method I: Theory, 217
- Damage Identification Through Regularization Method II: Applications, 218
- Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232
- Residual Displacement Response Spectrum and Its Application, 1083
- Service Load Response of Masonry Arch Bridges, 1026

Structural safety

- Actions for Verification of RC Structures with FRP Bars, 132
- Proportioning: Missing Step in Model Building Code Seismic Design, 1388
- Structural Safety and Serviceability of Concrete Bridges Subject to Corrosion, 845
- Walls of Defense, 1437

Structural stability

- Flutter Stability of Very Long Suspension Bridges, 72
- Latticed Mast Structures, 1047
- Reliability of Energy Method to Predict Lift Slab Structures Stability, 1006
- Smokestack Rescue, 1457
- Time-Delay Compensation in Active Control of Structures, 330

1998 ASCE TRANSACTIONS

Structural steels

- Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097
- Framing a Work of Art, 1429
- Through-Thickness Properties of Structural Steels, 1104

Structural strength

- Framework for Modeling Durability Cost of Structural Systems, 842
- The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001

Structure reinforcement

- New Ductile Hybrid FRP Reinforced Bar for Concrete Structures, 117

Structures

- Adaptive H_∞ Filter: Its Application to Structural Identification, 355
- Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279
- Latticed Mast Structures, 1047
- Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086
- This Time With Feeling, 1508

Struts

- Effect of Corners in Struted Excavations: Field Monitoring and Case Histories, 558

Subcontractors

- Bidding Practices of Subcontractors in Colorado, 166
- Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150
- Subcontractors' Bidding Decisions, 151

Subcritical flow

- Prediction of Discontinuity in Stage-Discharge Rating Curves, 677
- Subcritical Open-Channel Junction Flow, 747

Subgrades

- Back-Calculation of Concrete Pavement Modulus Using Road-Rater Data, 1210
- Method for Railroad Track Foundation Design. I: Development, 555
- Method for Railroad Track Foundation Design. II: Applications, 556

Subirrigation

- Improved Water Quality through Water Table Management in Eastern Canada, 866

Submerged discharge

- Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
- Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390

Submerged flow

- Flow Characteristics of Chimney Weir under Submergence, 863

Submerged jets

- Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766

Submerged vanes

- Experimental Investigation of Flow Past Submerged Vanes, 709

SUBJECT INDEX

Submerging

Critical Submergence for Intakes in Still-Water Reservoir, 657

Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338

Subsidence

Self-Weight Subsidence of Saturated Soft Porous Media, 286

Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Substrates

Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

Subsurface drainage

Improved Water Quality through Water Table Management in Eastern Canada, 866

Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879

Theory of Pipe Drainage Assisted by Mole Drainage, 864

Urban Subsurface Drainage, 1605

Subsurface flow

Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Subsurface investigations

Alaska's Last Link, 1536

The Deep (Available in Geo-Environmental Special Issue only), 1517

Determination of Heat Production Zones at Open-Cast Mine Dump, 451

Modeling of Subsurface Pulsed Radar for Nondestructive Testing of Structures, 976

Site Investigations: A Guide (available in Geoenvironmental Special Issue only), 1470

Subway tunnels

Burrowing Beneath Bangkok, 1481

Keeping Tabs on Two Tunnels (available in Geoenvironmental Special Issue only), 1468

Subways

Big Digs Around the World, 1548

Burrowing Beneath Bangkok, 1481

Suction

Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344

Method to Estimate Water Storage Capacity of Capillary Barriers, 553

Sulfides

Mercury Disposal Via Sulfur Reactions, 488

Sulfur

Mercury Disposal Via Sulfur Reactions, 488

Supercritical flow

Supercritical Flow in Chute Contraction, 647

Superstructures

Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266

Surcharge

Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533

Surveying

Surf zone

Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339

Estimating Wave Heights from Pressure Measured in Sand Bed, 1341

Longshore Sediment Flux in Water Column and Across Surf Zone, 1336

Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Surface irrigation

Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882

Global Identification of Surface Irrigation Parameters, 869

Infiltration Model for Furrow Irrigation, 860

Kostiakov Infiltration Parameters from Kinematic Wave Model, 868

Nonhydrostatic Model for Surface Irrigation, 877

Surface jets

Dilution of Circular Turbulent Nonbuoyant Surface Jets in Crossflows, 701

Surface waters

Decision Support System for Conjunctive Stream-Aquifer Management, 1289

Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

Surface waves

Application of SASW Method Underwater, 575

Automated Inversion Procedure for Spectral Analysis of Surface Waves, 595

Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352

Estimating Wave Heights from Pressure Measured in Sand Bed, 1341

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

Surface-active agents

Determination of Oxygen Diffusion Coefficient in Wastewaters, 405

Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487

Surfactants for Separation Processes: Enhanced Ultrafiltration, 458

Surge

Variational Problem of Water-Level Stabilization in Open Channels, 646

Surge irrigation

Fluidic Device for Surge Flow Irrigation, 885

Surveying

Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183

Surveying

GLONASS Satellite Surveying, 1187

Proof of Tienstra's Formula for an External Observation Point, 1184

Surveys, data collection

Analysis of Safety Indicators in Construction, 177

Assessment of Constructability Practices Among General Contractors, 51

Deep Mixing Method: A Global Perspective, 1529

Field-Level Management's Perspective of Design/Build, 1405

GIS Technology for Civil Engineering Education, 1016

Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150

Implementation of Robotics in Building: Current Status and Future Prospects, 143

Professional Practice Survey Results, 929

Subcontractors' Bidding Decisions, 151

Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames, 1009

Total Quality Management Implementations and Results: Progress Update, 1389

TQM Implementation in State Departments of Transportation: View from the Firing Line, 902

Trends in the Construction Needs of Hospital Facilities, 53

Suspended load

Engelund's Analysis of Turbulent Energy and Suspended Load, 268

Suspended sediments

Assessment of Hindered Settling of Fluid Mudlike Suspensions, 666

Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444

Drift Velocity Concept for Sediment-Laden Flows, 765

Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463

Engelund's Analysis of Turbulent Energy and Suspended Load, 268

Initial Settling Rate/Concentration Relationship in Zone Settling, 379

Marine Tailings Disposal Simulation, 691

One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732

Prandtl's Mixing Length Concept Modified for Equilibrium Sediment-Laden Flows, 742

Resistance and Drag Reduction of Flows of Clay Suspensions, 645

Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438

Suspended solids

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Suspension

Assessment of Hindered Settling of Fluid Mudlike Suspensions, 666

Direct Determination of Rheological Characteristics of Debris Flow, 749

A Mechanism for the Formation of Lutoclines by Waves, 1340

Swales

Characterization of Highway Runoff in Austin, Texas, Area, 389

1998 ASCE TRANSACTIONS

Performance of Vegetative Controls for Treating Highway Runoff, 509

Swelling

Physico-Chemical Behavior of Dry Silty Clays, 568

Swelling pressure

Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997

System analysis

General Formulation for Multilayered Pavement Systems, 1204

Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232

Introduction to Discrete Signals and Inverse Problems in Civil Engineering, 1579

Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403

Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397

Year 2000: Are You Ready?, 1504

System reliability

Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176

System Reliability Evaluation of Ductile Frame Structures, 1099

Systems

Adaptive H_{∞} Filter: Its Application to Structural Identification, 355

Determination of Bifurcation and Limit Points, 313

Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279

Introduction to Discrete Signals and Inverse Problems in Civil Engineering, 1579

Lagrangian/Eulerian Description of Dynamic System, 317

Tailings

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762

Marine Tailings Disposal Simulation, 691

Properties of Red Mud Tailings Produced under Varying Process Conditions, 404

Taiwan

Contractor Selection Process for Taipei Mass Rapid Transit System, 925

Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150

Tall buildings

Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992

LQG/LTR Control Methodology in Active Structural Control, 262

Priorities in Building Envelope Design, 42

Tanks

Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030

Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031

Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753

SUBJECT INDEX

Tension

- Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660
- Teaching methods**
- Building Knowledge (Available only in Structural Engineering Special Issue), 1448
- Civil Engineering Education Through Case Studies of Failures, 994
- The Civil Engineering Resource Library, 108
- Teamwork**
- Communication and Career Advancement, 910
- Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900
- Improving Construction Methods: A Story About Quality, 920
- Partnering Continuum, 939
- Project Delivery Trends: A Contractor's Assessment, 946
- Teamwork - the Key to Productivity, 896
- Technology**
- Averting Excavation Disaster, 898
- The Case for a Technology Management Institute, 897
- Collaborations Keynote Address, 921
- Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023
- Evaluation of the Tensar ARES™ Retaining Wall System, 1565
- Full-Scale Leachate Treatment Using New Evaporation Technology, 1371
- Fuzzy Logic for Evaluating New Construction Technology, 175
- Methodology for Prioritizing Cost-Effective Construction Technologies, 161
- New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195
- The Next 25 Years: The Future of the Construction Industry, 933
- Pipelines in the Constructed Environment, 1586
- Standing Firm: When Ethics are Challenged, 5
- Technology assessment**
- Microtunneling: An Owner's Perspective, 1391
- Technology transfer**
- Contractor Selection Process for Taipei Mass Rapid Transit System, 925
- Robotics 98, 1592
- Telecommunication**
- Sky High, 1513
- Temperature**
- Climatic Soil Freezing Modeled in Centrifuge, 636
- General Creep-Time Equation, 966
- Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409
- Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410
- Temperature distribution**
- Effective Temperature Differential in Concrete Pavements, 1208
- Temperature and Curling Stress in Concrete Pavements: Analytical Solutions, 1205
- Temperature effects**
- Analysis of a Layered Viscoelastic System with Transient Temperatures, 233
- Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Behavior and Strength of Laminated Glass, 210
- Casting Hot and Cold, 1439
- Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561
- Determination of Heat Production Zones at Open-Cast Mine Dump, 451
- Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468
- Dynamics of Temperature Stratification in Lowland Rivers, 770
- Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954
- Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
- Nonlinear Temperature Effects on Multilayered Concrete Pavements, 1211
- Properties of Red Mud Tailings Produced under Varying Process Conditions, 404
- Review of Mechanical Properties of HSC at Elevated Temperature, 959
- Sealant Degradation During Crack Sealing of Pavements, 983
- Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042
- Temperature Responses of Biological Phosphorus-Removing Activated Sludge, 397
- Temperature sensors**
- Performance Comparison for Thermal Comfort Sensors, 49
- Temporary structures**
- Risk-Cost Approach to Interim Drainage Structure Design, 1317
- Tendons**
- Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114
- Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090
- Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133
- Should Grouted Anchors Have Short Tendon Bond Length?, 535
- Tensile loading**
- Tensile and Nondestructive Testing of FRP Bars, 116
- Tensile strength**
- Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984
- Tensile stress**
- Analytic Solutions for Diametral Point Load Strength Tests, 314
- Tensiometers**
- Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540
- Tension**
- Active Control of Tensegrity Systems, 21
- Attitude Control of Space Platform Based Tethered Satellite System, 19
- Experimental Determination of Frequencies and Tension for Elastic Cables, 336
- Hyperbolic Cooling Towers with Bulge Imperfections, 359

Tension

Interface Behavior in Steel Fiber/Cement Composites under Tension, 332

Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136

Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092

Tension leg platforms

Simulation of Ringing in Offshore Systems under Viscous Loads, 280

Tension structures

Shape of Deployable Membrane Reflectors, 26

Test equipment

Calibration Chamber Size Effects on Penetration Resistance In Sand, 607

Small-Scale Accelerated Pavement Testing, 1209

Testing

Chloride Transport in Concrete Subjected to Electric Field, 979

Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114

Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974

Investigation into Cause of Failure of 22 kV PILC Cable, 1007

Michigan's Commercial Driver's License (CDL) Experience, 1217

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Personality of Civil Engineers, 931

Small-Scale Accelerated Pavement Testing, 1209

Test Wall Promises Big Savings (Available in Geoenvironmental Special Issue Only), 1516

Tests

Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65

Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620

Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772

Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499

Test Cases for Canal Control Algorithms, 853

Testing Concrete in Torsion: Instability Analysis and Experiments, 358

Tests of Fixed-Ended Plain Channel Columns, 1039

Texas

Downtown Goes Uptown in Stainless Steel, 1416

State of the Arts, 1454

Textiles

Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406

Thailand

Burrowing Beneath Bangkok, 1481

Thawing

Alum Residual Flocc Interactions with an Advancing Ice/Water Interface, 403

PCC Airfield Pavement Response During Thaw-Weakening Periods, 87

1998 ASCE TRANSACTIONS

Theories

Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613

Proof of Tienstra's Formula for an External Observation Point, 1184

Thermal analysis

Thermal Analysis of Reinforced-Concrete Shells, 1036

Thermal energy

Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Thermal factors

Modeling the Heat Sense Flowmeter, 871

Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27

Performance Comparison for Thermal Comfort Sensors, 49

Thermal fronts

Numerical Simulation of Gravity Current Front, 714

Thermal pollution

Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781

Thermal stresses

Dynamic Instability of Laminates Subjected to Temperature Field, 347

Thermodynamics

Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316

Thickness

Axially Loaded Concrete-Filled Steel Tubes, 1146

Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049

Bending Solution for Thick Plates with Quadrangular Boundary, 205

Free Vibration Analysis of Thick Superelliptical Plates, 222

Method for Railroad Track Foundation Design. I: Development, 555

Method for Railroad Track Foundation Design. II: Applications, 556

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Thermal Ice Growth: Real-Time Estimation, 81

Thin shell structures

FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132

Preservation of Historic Thin-Shell Concrete Structures, 36

Thin wall sections

Capacity of Thin-Walled I-Section Beam-Columns, 1063

FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163

Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119

Thin wall structures

Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285

Three-dimensional analysis

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

SUBJECT INDEX

- Design Considerations of Sight Distance Red Zones on Crest Curves, 1240
- Design of Sag Vertical Curves in Three-Dimensional Alignments, 1200
- Flutter Stability of Very Long Suspension Bridges, 72
- Layerwise Composite Plate Analysis Using an Element Template Methodology, 281
- Performance of Three-Dimensional Slope Stability Methods in Practice, 623
- Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585
- Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814
- Three-Dimensional Positioning Using SPOT Stereo Strips with Sparse Control, 1185
- Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362
- Three-dimensional flow**
- Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654
- Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728
- Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729
- Three-dimensional models**
- Freeway to the Future, 1464
- Numerical Flow Model for Fish Diversion Studies at Wanapum Dam, 784
- Pullback Testing of Seismically Isolated P/C I-Girder Bridge, 1126
- Strength of Plate Girder Web Panels under Pure Shear, 1045
- Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730
- Three-Dimensional Simulation of Scour-Inducing Flow at Bridge Piers, 708
- Virtual Environments and Water Quality Management, 830
- Tidal currents**
- Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789
- Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700
- Tidal hydraulics**
- Tidal and Transport Modeling by Using Turbulence $k-\omega$ Model, 399
- Tidal waters**
- Modeling Density and Turbulence in Stratified Tidal Medium, 662
- Numerical Gauge Approach to Water-Level Datum Determination, 685
- Tides**
- 2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819
- Analytical Expression for Tidal Damping in Alluvial Estuaries, 719
- Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789
- Tieback restraint systems**
- Beam-Column Method for Tieback Walls, 530

Time space scheduling

- Ties**
- Detailing for Reinforcement Stability in RC Members, 1093
- Tiles**
- Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
- Tiltmeters**
- Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Timber construction**
- Comparison of Perception Versus Reality in Timber Bridge Performance, 981
- Comparison of Static and Dynamic Response of Timber Shear Walls, 1100
- Strength and Deformability of Wood beneath Bolted Connectors, 1046
- Wood Engineering in the 21st Century: Research Needs and Goals, 1611
- Time dependence**
- Adaptive H_∞ Filter: Its Application to Structural Identification, 355
- Analysis of a Layered Viscoelastic System with Transient Temperatures, 233
- Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532
- Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549
- Experimental Study of Drained Creep Behavior of Sand, 318
- Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176
- Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056
- Settlement of Embankments on Soft Clays, 551
- Settlement of Embankments on Soft Clays, 586
- Shielding Production: Essential Step in Production Control, 140
- Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330
- Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208
- Time factors**
- Lane Rental—Innovative Way to Reduce Road Construction Time, 188
- Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776
- Representative Ground Water Monitoring in Fractured Porous Systems, 436
- Service-Life Prediction of Deteriorating Concrete Bridges, 1059
- Spatial and Temporal Errors in Estimating Regional Evapotranspiration, 865
- Time-Delay Compensation in Active Control of Structures, 330
- Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283
- Time series analysis**
- Time Series Analysis of Municipal Solid Waste Generation Rates, 395
- Time space scheduling**
- Space-Time Conservation Method Applied to Saint Venant Equations, 704

Timing

Timing

Comparison of Alternate Signal Timing Policies, 1260

Tires

Dynamic Instability of Tires Under Asymmetric Loads, 20

Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628

Tire Contact Using Two-Dimensional Finite Elements, 250

Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624

Toe

Riprap Sizing at Toe of Embankment Slopes, 727

Tolls

Shadow Tolls, 1441

Topography

GIS Errors and Surface Hydrologic Modeling: An Examination of Effects and Solutions, 1190

Tornadoes

Tornado Aftermath: Questioning the Tools (Available Structural Engineering Special Issue Only), 1538

Torsion

Effective Torsional Constant for Restrained Open Section, 1171

Generalized Warping Torsion Formulation, 249

Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

Misplacement of Launching Bearings in PC Launched Bridges, 75

Testing Concrete in Torsion: Instability Analysis and Experiments, 358

Torsional Restraint Against Elastic Lateral Buckling, 1156

Towers

Latticed Mast Structures, 1047

Sky High, 1513

Toxic wastes

Orientation to Health Risk Assessment for Practicing Engineers, 1364

Toxicity

Toxicity of Acrylic Acid to Acetate-Enriched *Methanosarcina* Cultures, 413

Tracers

Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461

Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388

Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430

Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433

Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431

Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499

Site Characterization and Containment Assessment with Dissolved Gases, 442

Sulfur Hexafluoride Gas Tracer Studies in Streams, 465

1998 ASCE TRANSACTIONS

Traffic

Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245

Traffic accident analysis

Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95

Traffic accidents

Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95

Traffic analysis

Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244

Simulation Model for Analyzing SPUDI with Actuated Signals, 1250

Traffic assignment

Equitable Traffic Assignment with Environmental Cost Functions, 1196

Traffic capacity

Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224

Utilization of Double Left-Turn Lanes with Downstream Land Reductions, 1226

Traffic characteristics

Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224

Viability of Remote Sensing on Two-Lane Roads, 1198

Traffic conflicts

Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197

Traffic congestion

Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222

Traffic control

Evaluation of Traffic Markings in Cold Regions, 1199
New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195

Traffic delay

Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225

Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227

Speed and Delay on Signalized Arterials, 1230

Traffic engineering

Shoring Up Lake Shore Drive, 1472

System to Identify Turning Movements at Signalized Intersections, 1271

Traffic flow

Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222

Approaching OD Trip Volumes Based on Inverse T-V Equation, 1229

Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244

Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227

Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197

Modified Delay Equations for Permitted Left Turns, 1241

New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195

SUBJECT INDEX

- Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829
- Simulation Model for Analyzing SPUDI with Actuated Signals, 1250
- Speed and Delay on Signalized Arterials, 1230
- Speed-Flow Modeling of Arterial Roads in Singapore, 1223
- Traffic flow pattern**
- Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Neural Network Approach to Classification of Traffic Flow States, 1261
- System to Identify Turning Movements at Signalized Intersections, 1271
- Traffic management**
- Evaluation of Traffic Markings in Cold Regions, 1199
- New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195
- Traffic and Transportation Studies, 1601
- Traffic planning**
- Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272
- Traffic safety**
- Design of Sag Vertical Curves in Three-Dimensional Alignments, 1200
- Michigan's Commercial Driver's License (CDL) Experience, 1217
- New Model for Passing Sight Distance on Two-Lane Highways, 1263
- Traffic signals**
- Comparison of Alternate Signal Timing Policies, 1260
- Speed and Delay on Signalized Arterials, 1230
- Traffic speed**
- Model for Sight Distance Analysis of Uncontrolled Intersections, 1215
- Speed-Flow Modeling of Arterial Roads in Singapore, 1223
- Traffic streams**
- Viability of Remote Sensing on Two-Lane Roads, 1198
- Traffic surveillance**
- New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195
- Traffic surveys**
- Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244
- System to Identify Turning Movements at Signalized Intersections, 1271
- Traffic volume**
- Approaching OD Trip Volumes Based on Inverse T-V Equation, 1229
- Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227
- Modified Delay Equations for Permitted Left Turns, 1241
- Speed and Delay on Signalized Arterials, 1230
- Viability of Remote Sensing on Two-Lane Roads, 1198
- Training**
- Career Fitness, 909
- Corporate University: Consulting Firm Case Study, 917

Transport phenomena

- Resources for Ongoing Professional Development, 911
- Transformations**
- Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309
- Simulation of Stationary Non-Gaussian Translation Processes, 220
- Strength of Slender Reinforced Concrete Columns, 1133
- Transformation Matrices for Finite and Small Rotations, 251
- Transient response**
- In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308
- Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616
- Transients**
- Analysis and Experiments on Stress Waves in Planar Trusses, 315
- Burgers' Equation Model for Unsteady Flow in Open Channels, 705
- Transmission towers**
- Active Control of Transmission Tower under Stochastic Wind, 1164
- Behavior of Cross-Bracing in Latticed Towers, 1064
- Design of Latticed Steel Transmission Structures, 1559
- Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182
- Reliability of Transmission Structures Including Non-linear Effects, 1130
- Transport phenomena**
- After the Rain Has Fallen: Ground Water Management Symposium, 1541
- Contaminant Source Solutions with Scale-Dependent Dispersivities, 824
- Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382
- Eutrophication Model for a Coastal Bay in Hong Kong, 449
- Evaluating Health Risks From Ground-Water Contaminants, 429
- Generation of Long-Term Record of Contaminant Transport, 448
- Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366
- Hydraulic Estimation of Dispersion Coefficient for Streams, 684
- Improved Finite-Analytic Methods for Steady-State Transport Problems, 690
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. I: Theory, 820
- Interlayer Diffusive Transfer and Transport of Contaminants in Stratified Formation. II: Analytical Solutions, 821
- Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515
- Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822
- Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776
- Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388
- NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477

Transport phenomena

- Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817
- Nonequilibrium Sorption in Soil/Bentonite Barriers, 411
- Nonhydrostatic Model for Surface Irrigation, 877
- Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433
- Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423
- Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294
- Significance of Defects in Annular Well Seals, 1368
- Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344
- Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825
- Three-Dimensional Model for Subsurface Transport and Biodegradation, 412
- Tidal and Transport Modeling by Using Turbulence $k-\epsilon$ Model, 399
- Transport of Dry Aerosols in Turbulent Jets, 494
- Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731
- Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870

Transport rate

- Statistics of Sediment Transport in Goodwin Creek, 775

Transportation engineering

- Applications of Advanced Technologies in Transportation, 1545

Transportation planning

- Developing Small Area Network Planning Models Using Desktop GIS, 1275
- Equitable Traffic Assignment with Environmental Cost Functions, 1196
- Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244
- New Methodology for Calibrating the Lowry Model, 1276
- Spatial Variations in Travel Behavior within Greater Toronto Area, 1218
- TEA-21: Something for Everyone, 1507
- TQM Implementation in State Departments of Transportation: View from the Firing Line, 902
- Traffic and Transportation Studies, 1601
- Transportation, Land Use, and Air Quality: Making the Connection, 1602
- Transportation Planning and Air Quality III: Emerging Strategies and Working Solutions, 1603
- Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Transportation systems

- Evaluating Viability of Privatized Transportation Projects, 839

Transverse waves

- Spectral Green's Dyadic for Point Sources in Piezoelectric Media, 207

Trapezoidal channels

- Formula for Calculating Critical Depth of Trapezoidal Open Channel, 653

1998 ASCE TRANSACTIONS

Travel demand

- Airport Modeling and Simulation, 1543
- Approaching OD Trip Volumes Based on Inverse T-V Equation, 1229
- Optimal Design of Public Bus Service with Demand Equilibrium, 1251
- Travel patterns**
- Discrete-Time Dynamic User-Optimal Departure Time/Route Choice Model, 1228
- Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272
- Spatial Variations in Travel Behavior within Greater Toronto Area, 1218
- Trip Linkage Patterns for Workers, 1231

Travel time

- Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222
- Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233
- Speed-Flow Modeling of Arterial Roads in Singapore, 1223
- Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804
- Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805

Trenches

- BEM Solution for Design of Trenches in Multilayered Landfills, 382
- Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270
- Surface-Subsurface Model for Trench Infiltration Basins, 1311
- Vibration Isolation of Machine Foundations by Periodic Trenches, 259

Trenchless technology

- The Invisible Infrastructure, 1506
- Making Way for Water, 1467
- Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828

Trends

- How to Succeed in Business..., 1511
- Into the 21st Century: A Great Time to Be a Civil Engineer, 919
- Project Delivery Trends: A Contractor's Assessment, 946
- Riding the Technology Wave, 1458
- A Summary of Construction Congress V, 940

Triaxial compression

- Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571
- Experimental Study of Drained Creep Behavior of Sand, 318

Triaxial tests

- Experimental Study of Drained Creep Behavior of Sand, 318
- Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639
- Mechanics of Granular Materials at Low Effective Stresses, 25
- Properties of Artificially Cemented Carbonate Sand, 572

SUBJECT INDEX

Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Trichloroethylene

Dealing with DNAPLs, 1521

Decontamination of U-Rich Waters by Granular Iron, 377

Groundwater Modeling and GIS to Determine Exposure to TCE at Tucson, 1366

Reductive Dechlorination of DNAPL Trichloroethylene by Zero-Valent Iron, 1378

TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441

VOC Vapor Sorption in Soil; Soil Type Dependent Model and Implications for Vapor Extraction, 391

Trickle irrigation

Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891

Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220

Trickling filters

Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Trihalomethanes

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376

Trucks

Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Trusses

Analysis and Experiments on Stress Waves in Planar Trusses, 315

Design of Trusses under Uncertain Loads Using Convex Models, 1060

Evolution of Optimum Shapes Using Genetic Algorithm, 1167

Hovering Over the Harbor, 1452

Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397

Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166

Tsunamis

Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338

Tube joints

Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066

Tubes

Design Guidelines for Longitudinal Plate to HSS Connections, 1110

Tunnel Construction Costs for Tube Transportation Systems, 145

Tuned liquid dampers

Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257

Viscous Heating of Fluid Dampers. I: Small-Amplitude Motions, 352

Viscous Heating of Fluid Dampers. II: Large-Amplitude Motions, 353

Turbulence

Tuned mass dampers

Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029

Optimum Design of Absorber for MDOF Structures, 1161

Tunnel construction

Tough Conditions, Innovative Solutions, 1438

Tunnel Construction Costs for Tube Transportation Systems, 145

Tunnel linings

Cure for Thinning Concrete, 1532

Tunneling

Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604

Cliffside Correction, 1485

Modular Neural Networks for Predicting Settlements During Tunneling, 562

Turbidity

A Mechanism for the Formation of Lutoclines by Waves, 1340

Turbines

Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201

Turbulence

ADV Measurements of Turbulence: Can We improve Their Interpretation?, 721

Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355

Characteristics of Shallow Rain-Impacted Flow over Smooth Bed, 788

Double-Leaf Gate for Energy Dissipation below Regulators, 778

Effects of Sediment Transport on Bed Friction and Turbulence, 1343

Engelund's Analysis of Turbulent Energy and Suspended Load, 268

Error Analysis of Flow Meter Measurements, 883

Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711

Modeling Density and Turbulence in Stratified Tidal Medium, 662

Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 733

Numerical Flow Model for Fish Diversion Studies at Wanapum Dam, 784

Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

Prandtl's Mixing Length Concept Modified for Equilibrium Sediment-Laden Flows, 742

Present Status of Second Order Closure Turbulence Models. II: Applications, 270

Present Status of Second-Order Closure Turbulence Models. I: Overview, 269

Recirculating Flow Generated by Line-Source Bubble Plumes, 754

Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671

Tidal and Transport Modeling by Using Turbulence $k-\omega$ Model, 399

Turbulent flow

Turbulent flow

Compound Open-Channel Flow Modeling with Nonlinear Low-Reynolds $k-\epsilon$ Models, 678

Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381

Drift Velocity Concept for Sediment-Laden Flows, 765

Flow Around Bridge Piers, 681

Present Status of Second Order Closure Turbulence Models. II: Applications, 270

Present Status of Second-Order Closure Turbulence Models. I: Overview, 269

Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707

Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656

Water Distribution in Very High Velocity Water Jets in Air, 725

Two phase flow

Prandtl's Mixing Length Concept Modified for Equilibrium Sediment-Laden Flows, 742

Two-dimensional

Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086

Two-dimensional analysis

Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392

High-Resolution Finite-Volume Method for Shallow Water Flows, 718

Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537

Two-dimensional flow

2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819

Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346

Space-Time Conservation Method Applied to Saint Venant Equations, 704

Weighted Implicit Finite-Volume Model for Overland Flow, 755

Two-dimensional models

2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303

Dynamics of Temperature Stratification in Lowland Rivers, 770

Eutrophication Model for a Coastal Bay in Hong Kong, 449

Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771

Friction Slope in Depth-Averaged Flow, 651

Infiltration Model for Furrow Irrigation, 860

Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664

Surface-Subsurface Model for Trench Infiltration Basins, 1311

Two-Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731

Ultimate loads

Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115

1998 ASCE TRANSACTIONS

Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101

Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Ultimate strength

Axially Loaded Concrete-Filled Steel Tubes, 1146

Through-Thickness Properties of Structural Steels, 1104

Ultrasonic testing

Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55

Guided Waves in Multilayered Plates for Internal Defect Detection, 246

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Tensile and Nondestructive Testing of FRP Bars, 116

Ultrasonic Techniques to Characterize Pultruded Composite Members, 129

Ultraviolet radiation

Photochemical Destruction of Cyanide in Landfill Leachate, 507

UV Acceptance, 1433

Uncertainty analysis

Bayesian Updating of Fragilities with Application to RC Frames, 1125

Belief Networks for Construction Performance Diagnostics, 99

Design of Trusses under Uncertain Loads Using Convex Models, 1060

Mixed-Integer Chance-Constrained Models for Ground-Water Remediation, 1312

Overtopping Reliability Models for River Levee, 786

Probabilistic Bridge Scour Estimates, 736

Robust Reliability of Projects with Activity-Duration Uncertainty, 154

Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Uncertainty and Home Builders' Adoption of Technological Innovations, 179

Uncertainty in Back Analysis of Slopes: Kettleman Hills Case History, 634

Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263

Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508

Underground conduits

Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

Underground construction

Big Digs Around the World, 1548

Investigation into Cause of Failure of 22 kV PILC Cable, 1007

Keeping Tabs on Two Tunnels (available in Geoenvironmental Special Issue only), 1468

Underground mines

Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Underground storage

Containing the Cold War's Hot Waste, 1519

Out of Sight, Out of Time, 1431

SUBJECT INDEX

Vadose zone

Pump-and-Treat Rescue, 1432

Underground structures

Ground Attack, 1406

Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430

Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062

The San Francisco Connection, 1473

Underwater structures

Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735

Undrained shear tests

Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534

Unit hydrographs

Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792

Universities

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Unsaturated flow

Method to Estimate Water Storage Capacity of Capillary Barriers, 553

Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393

Semianalytical Solution to Richards' Equation for Layered Porous Media, 890

Unsteady flow

Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17

Analysis of Linear and Monoclonal River Wave Solutions, 734

Burgers' Equation Model for Unsteady Flow in Open Channels, 705

Dynamics of Nonlinear Aeroelastic Systems, 24

Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

General Hydrodynamic Model for Sewer/Channel Network Systems, 683

Hydraulics of Open Channel Flow, 1575

Lateral Flow Exchange in Transient Compound Channel Flow, 650

Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776

Nondimensional Expression of Unsteady Canal Flow, 858

Uplift

Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Uplift resistance

Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537

Uranium

Decontamination of U-Rich Waters by Granular Iron, 377

Urban areas

Cost Allocation in Urban Infrastructure Funding, 1274

Integrated Modeling of Urban Shopping Activities, 1278

State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293

This Time With Feeling, 1508

Urban Subsurface Drainage, 1605

Urban development

Building Between Buildings (Available in Structural Engineering Special Issue Only), 1540

Urban highways

Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15

Urban planning

Downtown Goes Uptown in Stainless Steel, 1416

Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273

Shoring Up Lake Shore Drive, 1472

Sim City of Angels, 1460

Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280

Urban renewal

Downtown Goes Uptown in Stainless Steel, 1416

Urban roads

Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Urban runoff

Physical Characteristics of Urban Roadway Solids Transported During Rain, 422

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Urban Runoff Quality Management, 1604

Water Resources and the Urban Environment, 1607

Urban transportation

Developing Small Area Network Planning Models Using Desktop GIS, 1275

Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

U.S. Army Corps of Engineers

New Spin on Bid Sets, 1487

Use rates

Ordered Probability Modeling of Seat Belt Usage, 1232

User fees

Shadow Tolls, 1441

Utilities

Averting Excavation Disaster, 898

The Invisible Infrastructure, 1506

Sell-Off, 1526

Utilization

Multiskilled Labor Utilization Strategies in Construction, 196

Vacuum sewers

Defying Gravity, 1422

Vadose zone

Alternative Use of Multimodel for Subtitle D Landfill Applications, 1386

Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423

Vadose zone

Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499

Validation

Verification and Validation of Case-Based Prequalification System, 109

Value engineering

Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170

Valves

Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779

Vapor pressure

New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510

Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440

Variability

Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891

Evaluation of Fluctuating Pressures Measured with Connection Tubes, 695

Exact Analysis of Nonprismatic Beams, 361

Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649

Identifying Component Variability of End Product Specification Tests, 155

Impact of FWD Testing Variability on Pavement Evaluations, 1252

Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202

Progression and Variability of Damage on Rubble Mound Breakwaters, 1356

Representative Ground Water Monitoring in Fractured Porous Systems, 436

Semiactive Control Algorithms for Structures with Variable Dampers, 326

Variance analysis

Effect of Variability on End Product Specifications, 156

Identifying Component Variability of End Product Specification Tests, 155

Kriging of Lognormal Stochastic Field, 348

Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508

Vector analysis

Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Vegetation

Performance of Vegetative Controls for Treating Highway Runoff, 509

Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393

Salvaging Streams, 1475

Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Vehicle impact forces

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

1998 ASCE TRANSACTIONS

Vehicles

Dynamic Analysis of Existing Continuous Bridge, 60

New Form of Road/Railway Transition Curves, 1264

Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835

Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248

Vehicular traffic

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Velocity

ADV Measurements of Turbulence: Can We improve Their Interpretation?, 721

Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582

Calculation of Channel and River Velocities, 750

Clear-Water Contraction Scour under Bridges in Pressure Flow, 676

Determination of Velocity in Estuary for Bridge Scour Computations, 720

Dilution of Circular Turbulent Nonbuoyant Surface Jets in Crossflows, 701

Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400

Initial Motion of Sediment in Oscillatory Flow, 1331

Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet, 767

Transport of Dry Aerosols in Turbulent Jets, 494

Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323

Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Velocity distribution

Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669

Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771

Modified Logarithmic Law for Velocity Distribution Subjected to Upward Seepage, 787

Velocity profile

Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654

Veneers

Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965

Securing the Stone, 1412

Ventilation

BEM Solution for Design of Trenches in Multilayered Landfills, 382

Vertical angles

Revised Design Parameters for Vertical Curves, 1238

Vertical cylinders

Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354

Vertical drains

Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532

SUBJECT INDEX

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Vertical loads

Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364

Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365

Viaducts

Rebuilding History, 1510

Vibration

Analytical Modeling of Traffic-Induced Ground Vibrations, 319

Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331

Applications of FEM on Free and Forced Vibration of Laminated Shells, 204

Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267

Bench-Scale Investigation on Vibrorecovery of NAPL Ganglia from Sands, 483

Cable Stay Conundrum, 1488

Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299

Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309

Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121

Geotechnical Earthquake Engineering and Soil Dynamics III, 1570

Leipholz Column with Shear and Compressibility, 223

On Stability of Multitime Step Integration Procedures, 303

Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589

Period Formulas for Concrete Shear Wall Buildings, 1071

Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362

Time-Domain Analysis of Flexible Foundations Using Lanczos Vectors, 602

Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228

Vibration analysis

Free Vibration Analysis of Thick Superelliptical Plates, 222

Unified Finite Difference Formulation for Free Vibration of Cables, 1165

Vibration control

Mechanical Properties of Low-Yield Point Steels, 970

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Vibration Isolation of Machine Foundations by Periodic Trenches, 259

Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78

Vibration damping

Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284

A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212

Vibration effects

Effects of Vibration History on Modulus and Damping of Dry Sand, 625

Videotape

System to Identify Turning Movements at Signalized Intersections, 1271

Time-Lapse Video Applications for Construction Project Management, 164

Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181

Viscoelasticity

Analysis of a Layered Viscoelastic System with Transient Temperatures, 233

Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082

Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83

Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238

Triaxial Composite Model for Basic Creep of Concrete, 323

Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081

Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208

Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354

Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334

Viscoplasticity

Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83

Viscosity

Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082

Compatibility and Rheological Study of ASR Asphalt Binder, 956

Erosion of Fluid Mud Layers. I: Entrainment Model, 8

Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236

Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334

Viscous flow

Gravitational Fall Velocity of Sphere in Viscous Fluid, 350

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Visual aids

New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195

Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212

Visual perception

Matrix Approach to Contaminant Transport Potential, 1377

Void ratio

Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532

Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571

Void ratio

Linear Representation of Steady-State Line for Sand, 640

A Unique Critical State for Sand?, 630

Voids

Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961

Volatile organic chemicals

Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432

Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435

Flux Chamber Measurements of Mass Transfer Rates, 387

Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423

TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441

VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

VOC Vapor Sorption in Soil: Soil Type Dependent Model and Implications for Vapor Extraction, 391

Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501

Volatilization

Flux Chamber Measurements of Mass Transfer Rates, 387

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

VOC Vapor Sorption in Soil: Soil Type Dependent Model and Implications for Vapor Extraction, 391

Volume change

Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526

Volume measure

Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882

Smooth Surface Approximation for Computing Pit Excavation Volume, 1189

Vortex shedding

Bridge Flutter Derivatives at Vortex Lock-In, 1074

Vortices

Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17

Critical Submergence for Intakes in Still-Water Reservoir, 657

Experimental Investigation of Flow Past Submerged Vanes, 709

Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735

Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661

Walls

Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435

Drywall Joint Finishing: Productivity and Ergonomics, 181

Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089

Shear Stress around Vertical Wall Abutments, 744

Warpage

Effective Torsional Constant for Restrained Open Section, 1171

Generalized Warping Torsion Formulation, 249

Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254

Washing

Washing of Various Lead Compounds from a Contaminated Soil Column, 503

Washington, D.C.

Cellar Performance (Available in Structural Engineering Special Issue only), 1493

Waste disposal

Management of Discarded Pharmaceuticals, 1372

Mercury Disposal Via Sulfur Reactions, 488

Waste management

Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383

Location of Recycling Depots with GIS, 1277

Management of Discarded Pharmaceuticals, 1372

Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416

Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430

Waste recycling

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Materials Balance for Municipal Solid-Waste Management, 383

Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416

Recycled Materials in Geotechnical Applications, 1588

Waste site cleanup

Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375

Brownfields by the Book, 1520

Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

Superfund Success, Superfast, 1530

Waste sites

Risk-Based Correction Action and Brownfields Restoration, 1590

Waste storage

Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536

Quarry Conversion, 1502

Waste treatment

Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435

Low-Level and Mixed Radioactive Waste In-Drum Solidification, 1361

Nothing Wasted, 1465

Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440

Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384

Waste utilization

Bottoms Up, 1534

SUBJECT INDEX

Compatibility and Rheological Study of ASR Asphalt Binder, 956
Concrete Change, 1423
Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396
Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
Materials Balance for Municipal Solid-Waste Management, 383
Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416
Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394
Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973
Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473
Recycled Materials in Geotechnical Applications, 1588
Sludge's Re-Treat, 1524
Tire Shreds as Lightweight Retaining Wall Backfill: Active Conditions, 624
Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629
Wasteload allocation
Trends in BOD/DO Modeling for Wasteload Allocations, 495
Wastewater
Classification of Flotation Processes in Wastewater Decontamination, 427
Determination of Oxygen Diffusion Coefficient in Wastewaters, 405
Influence of Carbonation on Leaching of Cementitious Wasteforms, 426
UV Acceptance, 1433
Wastewater disposal
Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390
Wastewater management
Rebuilding Bosnia, 1419
Wastewater treatment
Anaerobic Treatment of Low-Strength Domestic Wastewater Using an Anaerobic Expanded Bed Reactor, 452
Derivation of Mean Cell Residence Time Formula, 428
Design of Municipal Wastewater Treatment Plants, 1560
Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487
Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406
In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481
Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474
Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455
Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456
Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374
Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374

Water distribution

Putting Wetlands to Work, 1476
Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390
Surfactants for Separation Processes: Enhanced Ultrafiltration, 458
A Tale of Two Bids, 1421
Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498
Use of Neural Networks in Design of Coastal Sewage Systems, 699
UV Acceptance, 1433
Water Resources and the Urban Environment-98, 1608
Water allocation policy
Optimal Allocation of Water Withdrawals in River Basin, 1320
Water balance
Modeling the Nile Basin Under Climatic Change, 803
Water Resources in Egypt: Strategies for Next Century, 1315
Water conservation
Integrated Energy and Water Conservation Modeling, 199
Water content
Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609
Influence of Water Content on SVE in a Silt Loam Soil, 500
Optimum Moisture Content for Dynamic Compaction of Collapsible Soils, 589
Refining the Definition of Field Capacity in the Literature, 880
Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540
Water demand
State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293
Sustainability Criteria for Water Resource Systems, 1599
Water Resources in Egypt: Strategies for Next Century, 1315
Water depth
Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360
Formula for Calculating Critical Depth of Trapezoidal Open Channel, 653
Water distribution
Detecting Accidental Contaminations in Municipal Water Networks, 1301
Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202
Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779
Making Way for Water, 1467
Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292
Probabilistic Model for Water Distribution Reliability, 1304
Sampling Design Methods for Water Distribution Model Calibration, 1318
Water Distribution in Very High Velocity Water Jets in Air, 725

Water flow

Water flow

Generalized Culvert Design Diagram, 887

High-Resolution Finite-Volume Method for Shallow Water Flows, 718

Water Distribution in Very High Velocity Water Jets in Air, 725

Water hammer

Energy Estimates for Discretization Errors in Water Hammer Problems, 692

Water infiltration

Use of Environmental SEM to Study Asphalt-Water Interactions, 967

Water jets

Water Distribution in Very High Velocity Water Jets in Air, 725

Water level fluctuations

Variational Problem of Water-Level Stabilization in Open Channels, 646

Water levels

Development and Evaluation of Canal Automation Algorithm CLIS, 855

GPS Heighting in Okavango Delta, 1191

Monitoring Hydraulic Gradient Using Three-Point Estimator, 434

Numerical Gauge Approach to Water-Level Datum Determination, 685

River Stage Forecasting Using Artificial Neural Networks, 794

Water management

Classification of Canal Control Algorithms, 850

Development and Evaluation of Canal Automation Algorithm CLIS, 855

Fluidic Device for Surge Flow Irrigation, 885

Performance Comparison of Overland Flow Algorithms, 688

Water plans

Water Resources in Egypt: Strategies for Next Century, 1315

Water pollution

The Membrane Treatment, 1494

Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385

Urban Runoff Quality Management, 1604

Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660

Water pollution control

Urban Runoff Quality Management, 1604

Water quality

Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284

Characterization of Highway Runoff in Austin, Texas, Area, 389

Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400

Estuarine and Coastal Modeling, 1564

Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479

Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520

1998 ASCE TRANSACTIONS

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Fuzzy Optimization Model for Water Quality Management of River System, 1290

Genetic Algorithms for Calibrating Water Quality Models, 398

Improved Water Quality through Water Table Management in Eastern Canada, 866

Linking Hydrodynamic and Water Quality Models with Different Scales, 419

Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292

Residence Time of Freshwater in Boston's Inner Harbor, 1333

Use of Regression Models for Analyzing Highway Stormwater Loads, 493

Virtual Environments and Water Quality Management, 830

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Water Resources and the Urban Environment, 1607

Water quality control

Fuzzy Optimization Model for Water Quality Management of River System, 1290

Urban Runoff Quality Management, 1604

Water reclamation

Sludge's Re-Treat, 1524

Water resources

Contaminant Source Solutions with Scale-Dependent Dispersivities, 824

Coordination: Water Resources and Environment, 1556

Irrigated Cropping Optimization, 859

Risk-Based Decision Making in Water Resources VIII, 1591

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Water Resources: A New Era for Coordination, 1606

Water Resources and the Urban Environment, 1607

Water Resources and the Urban Environment-98, 1608

Water resources development

Coordination: Water Resources and Environment, 1556

Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296

Sustainability Criteria for Water Resource Systems, 1599

Water resources management

Coordination: Water Resources and Environment, 1556

Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295

Sustainability Criteria for Water Resource Systems, 1599

Virtual Environments and Water Quality Management, 830

Water Resources: A New Era for Coordination, 1606

Water Resources in Egypt: Strategies for Next Century, 1315

Water-Resources Optimization Model for Santa Barbara, California, 1308

Water shortage

Susceptibility of Water Supply Reservoirs to Drought Conditions, 808

SUBJECT INDEX

Water storage

Method to Estimate Water Storage Capacity of Capillary Barriers, 553

Water supply

Reservoir Operation Studies of Sabarmati System, India, 1285

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Water supply systems

Cost-Effectiveness Analyses of Libya's Water Supply System, 1316

Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292

Probabilistic Model for Water Distribution Reliability, 1304

Rebuilding Bosnia, 1419

Reducing Vulnerability of Water Supply Systems to Attack, 847

Sampling Design Methods for Water Distribution Model Calibration, 1318

Seismic Performance Assessment of Water Delivery Systems, 841

Water surface profiles

Contraction and Expansion Losses Through Bridge Constrictions, 710

Water table

Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886

Improved Water Quality through Water Table Management in Eastern Canada, 866

Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515

Water transportation

Integrated Control for Series of Waterway Locks, 1346

Water treatment

Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376

Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396

Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375

Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288

Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520

The Membrane Treatment, 1494

Water Resources and the Urban Environment-98, 1608

Wetland Wonder, 1535

Water treatment plants

Efficiency in the Bag, 1498

Making Way for Water, 1467

Water use

Fluidic Device for Surge Flow Irrigation, 885

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Water waves

Analysis of Linear and Monoclonal River Wave Solutions, 734

Flexible Dual Membrane Wave Barrier, 1353

Wave equations

An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326

A Mechanism for the Formation of Lutoclines by Waves, 1340

Ocean Wave Measurement and Analysis, 1583

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Short-Wave Behavior of Long-Wave Equations, 1350

Water Wave Control by Submerged Pitching Porous Plate, 260

Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338

Watershed management

Engineering Approaches to Ecosystem Restoration, 1562

Soil Bioengineering Takes Root, 1474

Urban Wet-Weather Flow Management: Research Directions, 1299

Watersheds

DEM Based Overland Flow Routing Model, 791

Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Generation of Long-Term Record of Contaminant Transport, 448

Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409

Waterways

Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427

Ice-Tank Data on Brash-Ice Loads against Barges, 88

Integrated Control for Series of Waterway Locks, 1346

New Type of Bottom Protection in Harbors—Design Method, 1347

Ports '98, 1587

Wave action

Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Wave attenuation

Supercritical Flow in Chute Contraction, 647

Wave dispersion

Estimating the Directional Spectrum of Waves Near a Reflector, 1359

High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370

Inspecting the Unknown (Available in Geoenvironmental Special Issue Only), 1518

Short-Wave Behavior of Long-Wave Equations, 1350

Wave Propagation in Circular Jettied Channels, 1322

Wave energy

A Mechanism for the Formation of Lutoclines by Waves, 1340

Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201

Wave equations

General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635

Wave equations

Spectral Green's Dyadic for Point Sources in Poroelectric Media, 207

Wave forces

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290

Wave Scour Around Group of Vertical Piles, 1351

Wave generation

Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341

Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338

Wave groups

Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360

Wave height

Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360

Laboratory Study of Beach Nourishment Behavior, 1349

Wave measurement

Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Ocean Wave Measurement and Analysis, 1583

Wave propagation

2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303

Analysis and Experiments on Stress Waves in Planar Trusses, 315

Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777

Guided Waves in Multilayered Plates for Internal Defect Detection, 246

High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370

High-Resolution Finite-Volume Method for Shallow Water Flows, 718

Numerical Modeling of Tidal Wave Runup, 1342

Spectral Modeling of Nonlinear Dispersive Waves, 641

Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Wave Propagation in Circular Jettied Channels, 1322

Wave reflection

Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357

Characteristics of Wave Reflection Spectra, 1358

Vibration Isolation of Machine Foundations by Periodic Trenches, 259

Wave Phase Shift at Coastal Structures, 1334

Wave runup

Estimating Wave Heights from Pressure Measured in Sand Bed, 1341

Longshore Sediment Flux in Water Column and Across Surf Zone, 1336

Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332

Numerical Modeling of Tidal Wave Runup, 1342

Overtopping Reliability Models for River Levee, 786

Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335

1998 ASCE TRANSACTIONS

Wave spectra

Estimating the Directional Spectrum of Waves Near a Reflector, 1359

Oscillating Tidal Barriers and Random Waves, 694

Wave tanks

Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360

Wave velocity

Impulse Response Evaluation of Drilled Shafts, 615

Inspecting the Unknown (Available in Geoenvironmental Special Issue Only), 1518

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Wavelength

Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669

Waves

Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354

Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335

Ocean Wave Measurement and Analysis, 1583

Spectral Green's Dyadic for Point Sources in Poroelectric Media, 207

Wave Interactions with Vertical Slotted Barrier, 1337

Weather data

Mean-Field Rainfall Bias Studies for WSR-88D, 809

Weather forecasting

Climate Control, 1489

Webs

Castellated Beam Web Buckling in Shear, 1154

Deflections of Composite Beams with Web Openings, 1147

Specifications for Structural Steel Beams with Web Openings, 1597

Strength of Webs Subjected to Compressive Edge Loading, 9

Weight

Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609

Self-Weight Subsidence of Saturated Soft Porous Media, 286

Weight Versus Cost: Light-Weight Materials in Cable-Stayed Bridges, 1170

Weighting functions

Application of Equiredundancy Design to M-Estimation, 1188

Assessment of Scaling Behavior of Regional Floods, 811

Average Areal Precipitation by Percentage Weighted Polygon Method, 799

Calculating Weight Matrix of Neural Network for Resource Leveling, 112

Exact Analysis of Nonprismatic Beams, 361

Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804

Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805

SUBJECT INDEX

Weirs

- Aeration Performance of Low Drop Weirs, 648
- Aeration Performance of Triangular Plan-Form Labyrinth Weirs, 460
- Discharge Equation for Rectangular Slots, 759
- Flow Characteristics of Chimney Weir under Submergence, 863
- Hydraulics of Embankment Weirs, 758
- Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872
- Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726

Welds

- Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames, 1009

Well performance

- Modeling Well Hydrodynamics, 783

Wells

- Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373
- Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287
- Modeling Well Hydrodynamics, 783
- Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797
- Significance of Defects in Annular Well Seals, 1368

Wetlands

- Benefits from Including Wetland Component in Water Supply Projects, 1305
- Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475
- Engineering Approaches to Ecosystem Restoration, 1562
- Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374
- Putting Wetlands to Work, 1476
- Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499
- Water Resources Engineering '98, 1609

Wheels

- Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68

White noise

- Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206

Wickets

- Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121
- Forces on Edge-Hinged Panels in Gradually Varied Flow, 743

Width

- Influence of Service Cracking on Reinforcement Steel Corrosion, 952
- River Width Adjustment. I: Processes and Mechanisms, 751
- River Width Adjustment. II: Modeling, 752

Wind

- Overtopping Reliability Models for River Levee, 786

Wooden structures

Wind forces

- Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321

Wind loads

- Active Control of Transmission Tower under Stochastic Wind, 1164
- Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299
- Estimation of Long Return Period Design Values for Wind Speeds, 239
- Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992
- Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573

Wind speed

- Design Gust Wind Speeds in the United States, 1048
- Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073
- Guide to the Use of the Wind Load Provisions of ASCE 7-95, 1573
- Tornado Aftermath: Questioning the Tools (Available Structural Engineering Special Issue Only), 1538

Wind tunnel test

- Downtown Goes Uptown in Stainless Steel, 1416
- Wind Tunnel Studies of Buildings and Structures, 1610

Wind tunnels

- Threshold Between Smooth and Wavy Laminar Sheet Flow, 253

Wind velocity

- Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295

Window glass

- Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049

Wire products

- Small-Column Compression Tests on Concrete Confined by WWF, 1053

Wisconsin

- Climate Control, 1489

Women

- Trip Linkage Patterns for Workers, 1231

Wood

- Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396
- Design of Wood Diaphragm with Openings, 1116
- Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035
- Seismic Performance of Confined Sill Plate Connections, 3
- Strength and Deformability of Wood beneath Bolted Connectors, 1046
- Wood Engineering in the 21st Century: Research Needs and Goals, 1611

Wood poles

- Overlooked Assumption in Nonconstrained Post Embedment, 1387

Wooden structures

- Wood Engineering in the 21st Century: Research Needs and Goals, 1611

Work accidents

Work accidents

Identifying Root Causes of Construction Injuries, 147

Working conditions

Freeway to the Future, 1464

Workmens compensation

Analysis of Safety Indicators in Construction, 177

Writing

Communication and Career Advancement, 910

Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Writing papers

Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Yield line method

Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089

Yield strength

Displacement Estimates for Performance-Based Seismic Design, 1123

Erosion of Fluid Mud Layers. I: Entrainment Model, 8

Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

Zinc

Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487

Author Index

Abbott, Jamison

see Köylüglü, H. Uğur, 372

Abdel-Haq, Ali

Ground Settlement in Simi Valley following the Northridge Earthquake, 531

Abdel-Razek, Refaat H.

Quality Improvement Methodology and Implementation, 182

Abdel-Sayed, G.

see Grace, N. F., 137

Abdelwahab, Walid

see Sayed, Tarek, 95

Abdullah, Waddah S.

Influence of Aggregate Type and Gradation on Voids of Asphalt Concrete Pavements, 961

Abolnour, Mohammed M.

see Bubshait, Abdulaziz A., 41

AbouRizk, Simaan M.

see Hajjar, Dany, 186

see McCabe, Brenda, 99

AbouRizk, Simaan M., P.E.

see Chehayeb, Nader N., P.E., 152

Abraham, Dulcy M.

Disposal Costs for Environmentally Regulated Facilities: LCC Approach, 157

Optimization Modeling for Sewer Network Management, 187

see Mattila, Kris G., 168

Abrahams, Michael, P.E.

Mix and Match, 1413

Abrahamson, Norman A.

see Augello, Anthony J., 545

see Rathje, Ellen M., 539

Abrams, Daniel P.

see Schneider, Stephen P., 1122

Abt, Steven R.

Rating Adjustment for Settlement of Cutthroat Flumes, 893

Riprap Sizing at Toe of Embankment Slopes, 727

Water Resources Engineering '98, 1609

see Bohrer, Jeffrey G., 767

Abudayyeh, Osama, P.E.

Concrete Bridge Demolition Methods and Equipment, 70

Abu-Sa'da, Nazem

see Abdullah, Waddah S., 961

Achenbach, J. D.

see Popovics, J. S., 369

Adalier, Korhan

Foundation Liquefaction Countermeasures for Earth Embankments, 573

Adams, Barry J.

Artesian Landfill Liner System: Optimization and Numerical Analysis, 1319

Adams, E. Eric

see Hilton, Amy B. Chan, 1333

see Ravens, Thomas M., 1327

Adams, Jeffrey A.

see Reddy, Krishna R., 408

Adams, Michael J.

see Martinelli, Thomas J., 1489

Adams, Teresa, ed.

see Wang, Kelvin C. P., ed., 1553

Adamson, Daniel E. J.

see DiBattista, Jeffrey D., 1111

Adamson, R. M.

Field-Scale In-Situ Compliance of Arctic First-Year Sea Ice, 83

Adeli, Hojjat

Regularization Neural Network for Construction Cost Estimation, 141

see Sarma, Kamal C., 1088

Aderibigbe, O.

Effect of Sediment Gradation on Erosion by Plane Turbulent Wall Jets, 766

Adrien, Nicolas G., P.E.

Derivation of Mean Cell Residence Time Formula, 428

Aerospace Division of the American Society of Civil Engineers

Wind Tunnel Studies of Buildings and Structures, 1610

Afzalimehr, Hossein

Estimation of Gravel-Bed River Flow Resistance, 769

Agaccioglu, Hayrullah

Side-Weir Flow in Curved Channels, 873

Agarwal, A. C.

see Campbell, T. I., 77

Agarwal, Pushpendra K.

see Jain, Sharad K., 1285

Agthe, Donald E.

see Billings, R. Bruce, 1293

Ahlfeld, David P.

Presence of Nonconvexity in Groundwater Concentration Response Function, 1282

Ahmad, Farrukh

see Roberts, Deborah J., 453

Ahmed, Ferdous

Flow Around Bridge Piers, 681

Ahmed, I.

Performance of Plain Concrete Runway Pavement, 1005

- Ahrens, John P.**
Velocity Parameters for Predicting Cross-Shore Sediment Movement, 1323
- Aida, Tadayoshi**
see Kawazoe, Keizi, 267
- Aidanpää, Jan-Olov**
see Shen, Hayley, 337
- Air and Gas Duct Structural Design Committee of the Energy Division of the American Society of Civil Engineers**
The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications, 13
- Airey, D. W.**
see Huang, J. T., 572
- Aitcin, Pierre-Claude**
see Dallaire, Eric, 1407
- Akinci, Burcu**
Factors Affecting Contractors' Risk of Cost Overburden, 904
- Akl, Fred A.**
see Omara, Abdel-Aziz M., 828
- Aktan, Emin**
Structural Identification: Analytical Aspects, 1114
- Albano, Leonard D., P.E.**
Project-Based Course for Integration of Design and Construction at WPI, 1021
- Albergo, Nicholas P.E.**
Year 2000: Are You Ready?, 1504
- Albers, C.**
see Rajaratnam, N., 725
- Aldama, Alvaro A.**
see Martínez-Austria, Polioptro, 885
- Alderman, Bruce J.**
Optimal Design for Anaerobic Pretreatment of Municipal Wastewater, 374
- Al-Dubabe, Ibrahim A.**
Polymer Modification of Arab Asphalt, 972
see Ramadhan, Rezaqallah H., 954
- Alexander, Don R.**
see Grogan, William P., 1252
- Alexander, Scott D. B.**
see Ospina, Carlos E., 1091
- Al-Gahtani, H. J.**
Exact Analysis of Nonprismatic Beams, 361
- Ali, Galal**
see Taha, Ramzi, 974
- Ali, M. S. Mohamed**
see Oehlers, D. J., 1050
- Ali, Mir M.**
Concrete Change, 1423
- Ali, Mohammad F.**
see Al-Dubabe, Ibrahim A., 972
- Aliabadi, M. H.**
see Saleh, A. L., 322
- Alkass, S.**
see Savin, D., 112
- Al-Khatib, Issam A.**
Head-Discharge Relationship in Flumes of Compound Sections, 874
- Allan, Craig J.**
see Wu, Jy S., 444
- Allen, Cory**
Do Coated Pipes Last Longer?, 1499
Ground Attack, 1406
- Allen, Richard K., P.E.**
Professional Practice Survey Results, 929
- Allen-King, Richelle M.**
see Burris, David R., 497
- Allouche, Erez N.**
Environmental Remediation Using Horizontal Directional Drilling: Applications and Modeling, 1373
- Al-Manaseer, A. A.**
see Haug, M. D., 960
- Al-Masaeid, Hashem R.**
see Obaidat, Mohammed Taleb, 1181
- Al-Ostaz, A.**
Circular Inclusion in Half-Plane: Effect of Boundary Conditions, 244
- Al-Qudrah, Ali A.**
see Alsugair, Abdullah M., 113
- Al-Said, Fahd A.**
see Bubshait, Abdulaziz A., 41
- AlShibli, Khalid A.**
see Sture, Stein, 25
- Alsugair, Abdullah M.**
Artificial Neural Network Approach for Pavement Maintenance, 113
- Al-Suwaiyan, Mohammad S.**
Nondeterministic Evaluation of Field Scale-Dispersivity Relation, 817
- Altenhofen, Jon M.**
see Fredericks, Jeffrey W., 1289
- Al-Yousfi, A. Basel, P.E.**
Strategies for Simulation, Design, and Management of Solid Wastes Disposal Sites as Landfill Bioreactors, 1363
- Amaniampong, G.**
Reliability of Linear Viscoelastic Systems Excited by a Gaussian Process, 238
- American Society of Civil Engineers**
Design of Latticed Steel Transmission Structures, 1559
Urban Subsurface Drainage, 1605
- Amidi, Ala**
see Schneider, Stephen P., 1028
- Amy, Gary L.**
see Ozekin, Kenan, 425
- Anagnostopoulos, Christos**
see Georgiadis, Michael, 533

AUTHOR INDEX

ASCE-ACI

- Anagnostou, Emmanouil N.**
Mean-Field Rainfall Bias Studies for WSR-88D, 809
- Ancarani, Alessandro**
see Cancelliere, Antonino, 808
- Antil, François**
see Afzalimehr, Hossein, 769
- Anderson, James C.**
Performance of Steel Frame Building Which Experienced Intense Ground Motion, 1010
- Anderson, Michael**
Offshore Passive Soil Vapor Survey at a Contaminated Coastal Site, 440
- Anderson, Michael D.**
see Souleyrette, Reginald R., 1275
- Anderson, Stuart D.**
see Russell, Jeffrey S., P.E., 940
see Russell, Jeffrey S., P.E., 1402
- Andre, R. F.**
see Popovics, J. S., 369
- Andreotti, Giorgio**
see Mountain, Stewart, P.E., 1523
- Andrés, A.**
see Ibáñez, R., 380
- Ang, Chee-Keong**
see Brownjohn, James M. W., 992
- Ang, Thien Cheong**
see Hao, Hong, 319
- Anifotis, Stylianos**
see Yates, J. K., 932
- Ankeny, M. D.**
see Stormont, J. C., 437
- Annable, Michael D.**
Partitioning Tracers for Measuring Residual NAPL: Field-Scale Test Results, 431
- Anonymous**
A Stockholder's Story, 1425
- Ansari, Farhad**
Mechanics of Bond and Interface Shear Transfer in Optical Fiber Sensors, 255
- Ansary, Mehedi Ahmed**
Behavior of Horizontal and Vertical SV at JMA Sites, Japan, 582
- Anson, Michael**
Performance of Concrete Placing in Hong Kong Buildings, 153
- Anwar, Habib O.**
Spread of Surface Plume in Homogeneous and Stratified Coastal Waters, 700
- Apel, William A.**
see Schmieman, Eric A., 424
- Araganath, Vishwanathan**
see Batchelor, Bill, 417
- Aral, Mustafa M.**
Application of a Relaxation Scheme to Wave-Propagation Simulation in Open-Channel Networks, 777
- Arattano, Massimo**
see Cousot, Philippe, 749
- Arbitrio, Victoria, P.E.**
Federal Triangle Finale, 1451
- Arbogast, Dennis**
This Time With Feeling, 1508
- Arditi, David**
Factors That Affect Process Quality in the Life Cycle of Building Projects, 163
Incentive/Disincentive Contracts: Perceptions of Owners and Contractors, 183
see Kale, Serdar, 193
- Arliadi, Yoyong**
see Hadi, Muhammad NS, 1161
- Ariaratnam, S. T.**
see Amaniampong, G., 238
- Ariaratnam, Samuel T.**
see Allouche, Erez N., 1373
- Arliguie, Ginette**
see François, Raoul, 952
- Armanios, Erian A.**
see Lentz, W. Karl, 27
- Aronica, G.**
2D Multilevel Model for Flood Wave Propagation in Flood-Affected Areas, 1303
- Arora, Jasbir S.**
see Mijar, Anand R., 1085
- Arroyo, Valentín**
see Sanchez, Luis, 699
- Arulnathan, Rajendram**
see Boulanger, Ross W., 524
- Arwood, Scott**
see Mauldon, Matthew, 256
- ASCE Task Committee on Design Criteria for Composite Structures in Steel and Concrete**
Design Guide for Partially Restrained Composite Connections, 1144
- The ASCE Task Committee on Freight Pipelines Committee of the Pipeline Division**
Freight Pipelines: Current Status and Anticipated Future Use, 1235
- ASCE Task Committee on Hydraulics, Bank Mechanics, and Modeling of River Width Adjustment**
River Width Adjustment. I: Processes and Mechanisms, 751
ASCE Task Committee on Hydraulics, Bank Mechanics, and Modeling of Width Adjustment in Alluvial Channels
River Width Adjustment. II: Modeling, 752
- ASCE-ACI Committee 445 on Shear and Torsion**
Recent Approaches to Shear Design of Structural Concrete, 1172

Ashkar, Fahim

Approximate Confidence Intervals for Quantiles of Gamma and Generalized Gamma Distributions, 796
see Ouarda, Taha B.M.J., 795

Ashley, David

Evaluating Viability of Privatized Transportation Projects, 839
see Wang, Shou Qing, 180

Ashley, David B.

see Minato, Takayuki, 144

Ashour, M.

Lateral Loading of a Pile in Layered Soil Using the Strain Wedge Model, 554

Asi, Ibrahim M.

see Al-Dubabe, Ibrahim A., 972
see Ramadhan., Rezzallah H., 954

Asmer, H.

see Kalaycioglu, S., 28

Aso, Toshihiko

see Kawazoe, Keizi, 267

Assa'ad, Abdullah

Differential Upheaval of Phosphoric Acid Storage Tanks in Aqaba-Jordan, 997

Astiz, Miguel A.

Flutter Stability of Very Long Suspension Bridges, 72

Ata, Alaa

Cohesive and Adhesive Properties of Silicate Grout on Grouted-Sand Behavior, 527

Atanackovic, T. M.

see Cveticanin, L. J., 223

Atanow, Gennadii A.

Variational Problem of Water-Level Stabilization in Open Channels, 646

Atkinson, Joseph F.

Linking Hydrodynamic and Water Quality Models with Different Scales, 419

Attia, Bayoumi

see Elarabawy, Mohsen, 1315

Augello, Anthony J.

Dynamic Properties of Solid Waste Based on Back-Analysis of OII Landfill, 545

Axworthy, David H.

Transient Analysis with Time-Decoupled Pumping Station, 682

Aydin, Ismail

Evaluation of Fluctuating Pressures Measured with Connection Tubes, 695

Ayed, Amr

see Hegazy, Tarek, 165

Ayoub, Amir

Nonlinear Finite-Element Analysis of RC Shear Panels and Walls, 1058

Aziz M. I., Abdel

see Khalifa, Ahmed, 138

Aziznamini, Atorod, P.E.

see Wasserman, Edward P., P.E., 1446

Azoug, C.

see Sadaoui, Z., 458

Babarutsi, S.

Modeling Transverse Mixing Layer in Shallow Open-Channel Flows, 733

Back, W. Edward

see Maxwell, Donald A., 159

Baddour, Raouf E.

see Zhang, Hua, 711

Badrah, M. K.

Using Object-Communication for Design Standards Modeling, 105

Baetz, Brian W.

see Valco, Caterina, 1277

Bagley, David M.

Systematic Approach for Modeling Tetrachloroethene Biodegradation, 504

see Zheng, Yunsheng, 489

Baglin, P. S.

see Subedi, N. K., 1180

Bahnfleth, William P., P.E.

Prospects for Cool Thermal Storage in Competitive Electric Power Industry, 38

Bahr, Jean M.

see Moline, Gerilyn R., 436

Bahrainy, Hossein

Urban Planning and Design in a Seismic-Prone Region (Rasht in Northern Iran), 1280

Bai, Hsunling

Design Model for Selective Catalytic Reduction Process: Solution of Convective Diffusion and NO_x Reaction, 521

Bai, Junli

see Shi, Jingsheng, 562

Baig, M. Ghouse

Mechanistic Evaluation of Hedmanite and Lime Modified Asphalt Concrete Mixtures, 971

Baird, Brian

see Magoon, Orville T., ed., 1549

Balachandar, R., P.E.

Transport of Dry Aerosols in Turbulent Jets, 494

Balaguru, P.

see Toutanji, H., 958

Balan, Toader A.

Hysteretic Model of Ordinary and High-Strength Reinforcing Steel, 1057

Balasubramanian, N.

see Vijayaraghavan, K., 481

Baldasano, J. M.

see Popov, V., 382

Baldwin, Timothy D.

Decomposition of Specific Materials Buried within Sanitary Landfills, 518

Ball, James E.

Modeling Spatial Variability of Rainfall Over a Catchment, 806

AUTHOR INDEX

Beattie

- Ball, William P.
see Braghett, Anne, 505
- Ballard, G.
Shielding Production: Essential Step in Production Control, 140
- Bandyopadhyay, J. N.
see Chakravorty, Dipankar, 204
- Banerjee, P. K.
see Guin, J., 1072
- Banerji, Shankha K.
see Surampalli, Rao Y., 1380
- Bani-Hani, Khaldoun
Nonlinear Structural Control Using Neural Networks, 247
- Bank, Lawrence C.
Pendulum Impact Tests on Steel W-Beam Guardrails, 1237
- Banks, M. K.
see Reddi, Lakshmi N., 515
- Banno, Shigeru
Cyclic Elastoplastic Large Deflection Analysis of Thin Steel Plates, 252
- Banu, Dorina
Energy-Storing Wallboard: Flammability Tests, 963
- Bardet, J. P.
see Davis, C. A., 619
see Morochnik, V., 543
- Barkdoll, Brian
see Ettema, Robert, 723
- Barkdoll, Brian D.
Experimental Comparison of Dividing Open-Channel with Duct Flow in a T-Junction, 654
Standing Firm: When Ethics are Challenged, 5
- Barksdale, Richard D.
see Tutumluer, Erol, 1267
- Barlaz, Morton A.
see Hunt, Melody J., 826
- Barlaz, Morton A., P.E.
see Fairweather, Robert J., 414
- Barragán, Javier
see Monserrat, Joaquín, 882
- Barrett, J. David
see Clouston, Peggi, 965
- Barrett, Michael E.
Characterization of Highway Runoff in Austin, Texas, Area, 389
Performance of Vegetative Controls for Treating Highway Runoff, 509
see Irish, Lyn B., Jr., 493
- Barry, M.
see Merry, C. L., 1191
- Barsom, J. M.
Through-Thickness Properties of Structural Steels, 1104
- Barter, Tony
see Lu, Jian John, 1199
- Basahi, J. M.
Measuring Droplet Impact Energy with Piezoelectric Film, 878
- Basak, P.
see Lekha, K. R., 532
- Basu, Biswajit
Seismic Response of SDOF Systems by Wavelet Modeling of Nonstationary Processes, 345
- Basu, P. K.
see Sirisak, Suphasit, 831
- Batchelor, Bill
Stochastic Risk Assessment of Sites Contaminated by Hazardous Wastes, 417
- Bateman, A.
see Martín-Vide, J. P., 698
- Bates, Cary D., P.E.
see Flack, David A., 897
- Batiste, Susan N.
see Sture, Stein, 25
- Bauman, Richard
see Ashley, David, 839
- Baume, J. P.
see Strelkoff, T. S., 852
- Baume, Jean-Pierre
see Liu, Fubo, 855
- Baweja, Sandeep
Triaxial Composite Model for Basic Creep of Concrete, 323
- Bayazit, M.
see Cigizoglu, Hikmet Kerem, 818
see Ünal, N. Erdem, 1325
- Bayrak, Oguzhan
Confinement Reinforcement Design Considerations for Ductile HSC Columns, 1134
- Bažant, Zdeněk P.
Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. I: Theory, 364
Size Effect in Penetration of Sea Ice Plate with Part-Through Cracks. II: Results, 365
see Baweja, Sandeep, 323
see Li, Zhengzhi, 213
- Bazzurro, Paolo
Three Proposals for Characterizing MDOF Nonlinear Seismic Response, 1162
- Bea, R. G.
Reliability Characteristics of a Platform in the Mississippi River Delta, 592
- Beason, W. Lynn
Basis for ASTM E 1300 Annealed Glass Thickness Selection Charts, 1049
- Beattie, W. C.
see Curran, R., 201

Beck, J. L.

Updating Models and Their Uncertainties. Part I: Bayesian Statistical Framework, 263

see Katafygiotis, L. S., 264

Becker, Eric B.

see Hamzeh, Osama, 236

see Hamzeh, Osama N., 73

Bédard, Claude

see Mokhtar, Ahmed, 98

Behncke, Roberto H.

see Kemp, Alan R., 1064

Behr, Richard A.

Seismic Performance of Architectural Glass in Mid-Rise Curtain Wall, 48

Beling, Peter A.

see Olsen, J. Rolf, 1306

Beljin, Milovan S.

see Ross, Randall R., 443

Beltaos, Spyros

Longitudinal Dispersion on Ice-Covered Rivers, 90

Benaroya, Haym

Economic and Technical Issues for Lunar Development, 31

Bencardino, F.

see Spadea, G., 130

Bendito, América

see Thomson, Edward, 1143

Benedek, Christine M.

Equitable Traffic Assignment with Environmental Cost Functions, 1196

Benekohal, Rahim F.

Sampling Method for Cost Estimation of Highway Noise Barrier Infrastructure, 848

Ben-Haim, Yakov

Robust Reliability of Projects with Activity-Duration Uncertainty, 154

Benítez, Manuel A.

Deflections of Composite Beams with Web Openings, 1147

Benmokrane, Brahim

see Thériault, Michèle, 115

Bennett, Philip C.

see Nicot, Jean-Philippe, 499

Bennur, Mallikarjuna

see Fafard, Mario, 60

Benson, C. H.

see Meerdink, J. S., 6

Benson, Craig H., ed.

Risk-Based Correction Action and Brownfields Restoration, 1590

see Blotz, Lisa R., 609

see Pekarun, Osman O., 1368

see Tatlisoz, Nilay, 628

Benson, R. C.

see Kjartanson, B. H., 1365

Bentley, Keith

Freeway to the Future, 1464

Berg, Eric R.

Municipal Solid Waste bottom Ash as Portland Cement Concrete Ingredient, 973

Berg, Richard L.

see Janoo, Vincent C., 87

Berge, Stig

see Gandhi, P., 1068

Bergeron, H. Edmund

Making the Transition from Engineer to Entrepreneur, 914

Bergman, Lawrence A.

see Field, Richard V., Jr., 229

Berka, Stanislaw

New Perspectives for ATMS: Advanced Technologies in Traffic Detection, 1195

Berlamont, J.

see Haque, A., 662

Bernold, Leonhard E.

see Carver, Catherine, 898

see Moon, Sungwoo, 176

Berrais, Abbas

Advisory Expert System for Non-Linear Seismic Analysis/Design of Coupled Walls, 1400

Berry, Dick, ed.

see Johnsen, Larry, ed., 1571

Bert, Ray

High-Tech Text, 1459

Paradise Crossed, 1471

Berti, David J., P.E.

Cementing the Future, 1531

Bevolo, A. J.

see Kjartanson, B. H., 1365

Beystrom, Len, P.E.

see Grodner, Michael, P.E., 1532

Bhattacharya, Baidurya

Continuum Damage Mechanics-Based Model of Stochastic Damage Growth, 328

Bhatti, M. Asghar

Nonlinear Pavement Distress Model Using Dynamic Vehicle Loads, 835

Bhurtel, J.

see Polprasert, C., 475

Bice, Nancy T.

see Foote, Gary R., 441

Biegel, Steven L.

Cellar Performance (Available in Structural Engineering Special Issue only), 1493

Biggar, Kevin W.

Site Investigations of Fuel Spill Migration into Permafrost, 85

see Allouche, Erez N., 1373

Biglari, Bahram

Numerical Modeling of Flow around Bridge Abutments in Compound Channel, 664

AUTHOR INDEX

Boyle

- Billings, R. Bruce**
State-Space Versus Multiple Regression for Forecasting Urban Water Demand, 1293
- Billington, David P.**
see Edwards, Nicholas P., 1132
see Hines, Eric M., 67
see Ochsendorf, John A., 1420
- Bischof, Christian H.**
see Sinha, Amit K., 1298
- Bischoff, Deb**
Pounding the Pavement, 1525
- Biswas, Pratim**
see Boufadel, Michel C., 819
- Blaauwendraad, Johan**
see Lourenço, Paulo B., 1095
- Blackwell, Kevin G.**
see Polak, Maria Anna, 1136
- Bland, Richard L.**
Defusing the Millennium Bomb, 1461
- Blandford, George E.**
see Xiao, Weimin, 281
- Bligh, Roger**
see Reid, John D., 1202
- Blight, G. E.**
see Lampacher, B. J., 953
- Bliven, Adam R.**
see Logan, Bruce E., 496
- Blotz, Lisa R.**
Estimating Optimum Water Content and Maximum Dry Unit Weight for Compacted Clays, 609
- Blumberg, Alan F., ed.**
see Spaulding, Malcolm L., ed., 1564
- Boccelli, Dominic L.**
Optimal Scheduling of Booster Disinfection in Water Distribution Systems, 1292
- Bodamer, Dave**
Riding the Technology Wave, 1458
- Bodamer, David**
Baseball Caps, 1533
A Composite Sketch, 1409
- Boedo, S.**
Corrected Solution of Clamped Ring Plate with Edge Point Load, 292
- Bogardi, I.**
see Goderya, F. S., 1300
- Boger, Michael**
Solutions of Unsaturated Seepage Problem by Power-Series Method, 813
Three-Dimensional Analytical Solutions for Unsaturated Seepage Problem, 814
- Bohara, S. L.**
see Chatterjee, C., 863
- Bohrer, Jeffrey G.**
Predicting Plunge Pool Velocity Decay of Free Falling, Rectangular Jet, 767
- Boisard, P.**
see Colliat, J.-L., 1344
- Bonalo, Mohan V. S., ed.**
see Reddi, Lakshmi N., ed., 1566
- Bonaparte, Rudolph**
see Daniel, David E., 584
- Bonneson, James A.**
Lane Volume and Saturation Flow Rate for Multilane Intersection Approach, 1227
- Bontempi, Franco**
Lagrangian/Eulerian Description of Dynamic System, 317
- Boothby, Thomas E.**
Preservation of Historic Thin-Shell Concrete Structures, 36
Service Load Response of Masonry Arch Bridges, 1026
- Borden, R. C.**
Effect of In-Lake Water Quality on Pollutant Removal in Two Ponds, 463
- Borden, Robert C.**
see Hunt, Melody J., 826
- Bordogna, Joseph**
Tomorrow's Civil Systems Engineer—The Master Integrator, 1017
- Bormans, Myriam**
Dynamics of Temperature Stratification in Lowland Rivers, 770
- Borst, Michael**
see Field, Richard, 1299
- Bose, Purnendu**
Adsorption of Natural Organic Matter on Preformed Aluminum Hydroxide Floes, 471
- Bouchart, François J.-C.**
Is Rational Decision Making Appropriate for Management of Irrigation Reservoirs?, 1314
- Boufadel, Michel C.**
2D Variably Saturated Flows: Physical Scaling and Bayesian Estimation, 819
- Boulanger, Ross W.**
Dynamic Properties of Sherman Island Peat, 524
- Boutwell, Gordon P.**
see Blotz, Lisa R., 609
- Bowers, John J., ed.**
Geosynthetics in Foundation Reinforcement and Erosion Control Systems, 1569
- Bowers, Alan R.**
see Magbanua, Benjamin S., Jr., 491
- Bowlby, William**
see Herman, Lloyd A., 1245
- Boyd, John P.**
see Katopodes, Nikolaos D., 1350
see Sanders, Brett F., 641
- Boyle, S.J.**
Developing Geographic Information Systems for Land Use Impact Assessment in Flooding Conditions, 1291

Bracci

Bracci, Joseph M.

Seismic Performance of Confined Sill Plate Connections, 3

see Beason, W. Lynn, 1049

Brackbill, Craig E., P.E.

Executive Fellowship Program: Lessons for Engineers, 918

Bradford, Scott F.

Nonhydrostatic Model for Surface Irrigation, 877

Braghetta, Anne

NOM Accumulation at NF Membrane Surface: Impact of Chemistry and Shear, 505

Braimah, Abass

Polypropylene FRC Bridge Deck Slabs Transversely Prestressed with CFRP Tendons, 133

Branco, F. A.

see de Brito, J., 1393

Brandon, Peter

see Rezgui, Yacine, 103

Bray, Jonathan D.

Earthquake-Induced Displacements of Solid-Waste Landfills, 548

see Augello, Anthony J., 545

see Rathje, Ellen M., 539

Breen, J. E.

see Hamilton, H. R., III, 64

see Hamilton, H. R., III, 65

Briaud, Jean-Louis

Beam-Column Method for Tieback Walls, 530

Should Grouted Anchors Have Short Tendon Bond Length?, 535

Broderick, Gregory P., ed.

see Bowders, John J., ed., 1569

Brown, Cheryl A.

Numerical Gauge Approach to Water-Level Datum Determination, 685

Brown, Linfield C.

see Mulligan, Ann E., 398

Brownjohn, James M. W.

Full-Scale Dynamic Response of High-Rise Building to Lateral Loading, 992

Bruce, Donald A.

Deep Mixing Method: A Global Perspective, 1529

Bruce, Mary Ellen C.

see Bruce, Donald A., 1529

Brucy, F.

see Chow, F. C., 549

Bruneau, Michel

see Sarraf, Majid, 1159

see Sarraf, Majid, 1160

see Zahrai, Seyed Mehdi, 1127

Brunsdon, Jeffrey D.

see Corssmit, C. W., 1526

Bubshait, Abdulaziz A.

Comparison of Delay Analysis Methodologies, 178
Design Fee Versus Design Deficiency, 41

1998 ASCE TRANSACTIONS

Determining Schedule Impact: Working Practice, 1404

Buchanan, David

see Abudayyeh, Osama, P.E., 70

Buchanan, Ian D.

Reactor Models for Horseradish Peroxidase-Catalyzed Aromatic Removal, 470

Buchberger, Steven G.

see Sansalone, John J., 15

see Sansalone, John J., 422

Buchholz, Karl

see Janson, Bruce N., 1241

Buchholz, Kurt W.

see Curran, Mark D., 1427

Bucknam, Mark D., P.E.

Net Gains, 1522

Buechel, Gerard J.

see Feldman, Alexander I., 1468

Buenfeld, Nick R.

Chloride Transport in Concrete Subjected to Electric Field, 979

Burges, Stephen J.

Hydrological Effects of Land-Use Change in a Zero-Order Catchment, 802

Burke, Dennis A., P.E.

Nothing Wasted, 1465

Burken, Joel G.

Phytoremediation: Plant Uptake of Atrazine and Role of Root Exudates, 12

Burkes, Jerry P.

see Rollings, Raymond S., 989

Burleson, Rebecca C.

Multiskilled Labor Utilization Strategies in Construction, 196

Burnworth, Bruce, P.E.

see Monroe, Kevin, P.E., 1467

Burris, David R.

Chlorinated Ethene Reduction by Cast Iron: Sorption and Mass Transfer, 497

Burt, C. M.

Improved Proportional-Integral (PI) Logic for Canal Automation, 857

see Strelkoff, T. S., 852

Bush, Cheryl A.

Sampling Design Methods for Water Distribution Model Calibration, 1318

Buyukozturk, Oral

Failure Behavior of Precracked Concrete Beams Retrofitted with FRP, 131

Byrne, Raymond H., ed.

see Demsetz, Laura A., ed., 1592

Çahmak, Ahmet Ş.

see Köylüglü, H. Uğur, 372

Cahoon, Joel

Kostiakov Infiltration Parameters from Kinematic Wave Model, 868

AUTHOR INDEX

Castro

- Cai, C. W.**
Exact Method for Static and Natural Vibration Analyses of Bi-Periodic Structures, 309
- Cai, Chun S.**
Composite Girder Design of Cable-Stayed Bridges, 1401
- Cai, G. Q.**
Reliability of Nonlinear Structural Frame Under Seismic Excitation, 311
- Cajot, L. G.**
see Franssen, J. M., 1042
- Çakiroğlu, Cem**
Methodology for Predicting Cooling Water Effects on Fish, 447
- Calise, Anthony J.**
Active Attenuation of Building Structural Response Using Robust Control, 272
- Câmara, António S.**
Virtual Environments and Water Quality Management, 830
- Camfield, Fred E.**
Guidelines for Quarystone Armor Units, 194
- Camp, Charles**
Optimized Design of Two-Dimensional Structures Using Genetic Algorithm, 1086
- Camp, Charles V.**
Stochastic Approach to Delineating Wellhead Protection Areas, 1302
- Campbell, Kathleen, P.E.**
Pollution Prevention as Planning Tool in Rehabilitation of Historic Canton Railroad Viaduct, 1381
- Campbell, T. I.**
Stress Distribution at PTFE Interface in Cylindrical Bearing, 77
- Campbell, Timothy J.**
see Burris, David R., 497
- Cancelliere, Antonino**
Susceptibility of Water Supply Reservoirs to Drought Conditions, 808
- Cannon, Ian B. S.**
see McGuire, Jeffrey W., 1032
- Cao, Guozhong**
see Camp, Charles, 1086
- Cao, J. J.**
Design Guidelines for Longitudinal Plate to HSS Connections, 1110
- Cao, Shuyou**
Design for Hydraulic Geometry of Alluvial Channels, 702
- Cao, Zengyan**
see Watanabe, Hiroyuki, 265
- Capuani, D.**
Dynamics of Multicell, Thin-Walled Beams with Regular Cutouts, 285
- Carballo, Jorge E.**
see Bazzurro, Paolo, 1162
- Carino, Nicholas J.**
see Castro, Protasio F., 116
see Chang, Luh Maan, 980
see Phan, Long T., 959
- Carlson, J. R. J.**
Management of Solid Waste from Abrasive Blasting, 1369
- Carnahan, James V.**
Comparative Life-Cycle Cost Analysis of Underground Heat Distribution Systems, 1270
see Marsh, Charles, 1269
- Caron, Octave**
see Carter, Donald, 89
- Carpenter, Marshall, P.E.**
see Kraemer, Thomas A., P.E., 1382
- Carriere, Patrick**
see Reed, Brian E., 1374
- Carrigan, Emory W.**
see Mukhopadhyay, Chirantan, 1440
- Carroll, James R.**
From Product to Behavior, 942
- Carroll, Jim**
see Ashley, David, 839
- Carsel, Robert F.**
see Chen, Y. David, 409
- Carson, David A.**
see Daniel, David E., 584
- Carter, Carrie J.**
Dealing with DNAPLs, 1521
- Carter, Donald**
Ice Thrust in Reservoirs, 89
- Carter, Ernest E., P.E.**
Containing the Cold War's Hot Waste, 1519
- Carter, Everett C.**
see Shafahi, Yousef, 1250
- Carter, J. P.**
see Fernando, N. S. M., 591
- Cartmeil, M. P.**
see Wang, Yongji, 1263
- Carvalho, H. O.**
Irrigated Cropping Optimization, 859
- Carver, Catherine**
Averting Excavation Disaster, 898
- Casanova, José L.**
see Martinelli, David R., 18
- Casas, Juan R.**
see Crespo-Minguillón, César, 1177
- Castellani, A.**
Elastomeric Materials Used for Vibration Isolation of Railway Lines, 284
- Castelli, Francesco**
see Maugeri, Michele, 581
- Castro, Protasio F.**
Tensile and Nondestructive Testing of FRP Bars, 116

- Castronovo, Joseph P., ed.**
Pipelines in the Constructed Environment, 1586
- Casulli, Vincenzo**
Numerical Simulation of 3D Quasi-Hydrostatic, Free-Surface Flows, 728
- Catbas, Necati**
see Aktan, Emin, 1114
- Caughey, David A.**
see Liggett, James A., 1567
see Liggett, James A., 1595
- Causon, D. M.**
see Mingham, C. G., 718
- Cayes, Kim**
The Need to Learn and Why Engineers May Be Poor Students, 912
- Chaallal, O.**
Shear Strengthening of RC Beams by Externally Bonded Side CFRP Strips, 126
- Chadik, Paul A.**
see Wu, Wells W., 486
- Chai, Y. H.**
Formulation of Duration-Dependent Inelastic Seismic Design Spectrum, 1124
- Chakravorty, Dipankar**
Applications of FEM on Free and Forced Vibration of Laminated Shells, 204
- Chan, H. C.**
see Cai, C. W., 309
- Chandra, Satish**
see Goel, N. K., 663
- Chandrashekhara, K.**
Static Analysis of Infinite Laminated Cylindrical Shell Panel, 16
- Chang, Andrew Shing-Tao**
On-Call Contracting Strategy and Management, 930
- Chang, Cheng-Hsi**
see Hsu, Chung-Chieh, 747
- Chang, Chia-Chyi**
see Tsai, Jiin-Song, 627
- Chang, Ching S.**
High-Gradient Modeling for Love Wave Propagation in Geological Materials, 370
- Chang, Ching-Yuan**
see Wu, Chao-Hsiung, 482
- Chang, Fu-Hsian**
see Lu, Jau-Yau, 788
- Chang, Jui-Hung**
Calculation of Elastodynamic Energy Parameter for Plane Crack Prior to Kinking, 241
- Chang, Jyh-Hwa**
see Tang, Chii-Jau, 735
- Chang, Li-Yue**
see Chen, Liang-Chien, 1185
- Chang, Luh Maan**
Process of In-Place Evaluation of Concrete Strength, 980
- Chang, Tsang-Jung**
Gravitational Fall Velocity of Sphere in Viscous Fluid, 350
- Chang, W. L.**
see Mo, Y. L., 1390
- Chang, Yoon-Young**
Plant-Enhanced Subsurface Bioremediation of Nonvolatile Hydrocarbons, 393
- Chanson, H.**
Overflow Characteristics of Circular Weirs: Effects of Inflow Conditions, 872
Rapid Reservoir Sedimentation of Four Historic Thin Arch Dams in Australia, 999
see Montes, J. S., 669
- Chao, Chian-Hsueg**
see Lo, Wei, 925
- Chao, Ching-Kong**
Antiplane Interaction of a Crack with a Circular Inclusion in an Elastic Half-Plane, 226
- Chao, Chiung-Ju**
Fuzzy Pattern Recognition Model for Diagnosing Cracks in RC Structures, 101
- Chao, Keh-Ping**
Water-to-Air Mass Transfer of VOCs: Laboratory-Scale Air Sparging System, 501
- Chao, Li-Chung**
Fuzzy Logic for Evaluating New Construction Technology, 175
- Charbeneau, Randall J.**
see Barrett, Michael E., 389
see Barrett, Michael E., 509
see Irish, Lyn B., Jr., 493
- Charbit, F.**
see Sadaoui, Z., 458
- Charbit, G.**
see Sadaoui, Z., 458
- Charette, François**
see Goudreau, Sylvain, 306
- Charlet, Laurent**
Decontamination of U-Rich Waters by Granular Iron, 377
- Chase, Gerald W.**
Improving Construction Methods: A Story About Quality, 920
- Chasey, Allan D.**
see de la Garza, Jesus, 938
- Chastain, James R., Jr., P.E.**
Orientation to Health Risk Assessment for Practicing Engineers, 1364
- Chatterjee, C.**
Flow Characteristics of Chimney Weir under Submergence, 863

AUTHOR INDEX

Cheung

- Chau, K. T.**
Analytic Solutions for Diametral Point Load Strength Tests, 314
- Chau, K. W.**
Eutrophication Model for a Coastal Bay in Hong Kong, 449
- Chaudhry, Fazal H.**
see de Araújo, José Carlos, 771
- Chaudhry, M. Hanif**
see Islam, M. Rashidul, 776
see Kassem, Ahmed A., 741
- Chauhan, H. S.**
see Upadhyaya, A., 886
- Chawla, Arun**
Spectral Model for Wave Transformation and Breaking Over Irregular Bathymetry, 1345
- Chee, Kum-Thong**
see Lee, Fook-Hou, 558
- Chehayeb, Nader N., P.E.**
Simulation-Based Scheduling with Continuous Activity Relationships, 152
- Chellam, Shankararaman**
Existence of Critical Recovery and Impacts of Operational Mode on Potable Water Microfiltration, 520
see Jacangelo, Joseph G., 1494
- Chen, C. J.**
see Jaw, S. Y., 269
see Jaw, S. Y., 270
- Chen, Chang-New**
Solution of Beam on Elastic Foundation by DQEM, 373
- Chen, Cheng-lung**
Rheological Equations in Asymptotic Regimes of Granular Flow, 245
- Chen, Chih-Bin**
see Chang, Jui-Hung, 241
- Chen, Dar-Hao**
Full-Scale Accelerated Pavement Testing of Texas Mobile Load Simulator, 1257
- Chen, Huey-Kuo**
Discrete-Time Dynamic User-Optimal Departure Time/Route Choice Model, 1228
- Chen, J. F.**
Effective Cross Sections of Asymmetric Rings on Cylindrical Shells, 1142
- Chen, Jen-Yan**
see Lu, Jau-Yau, 788
- Chen, Jian-Shiuh**
Analyses of Tensile Failure Properties of Asphalt-Mineral Filler Mastics, 984
- Chen, Jyh-Cherng**
Dynamic Adsorption of Heavy Metals under Incineration Temperatures, 468
- Chen, Liang-Chien**
Three-Dimensional Positioning Using SPOT Stereo Strips with Sparse Control, 1185
- Chen, W. F.**
see Ramesh, G., 987
see Zhao, Xing-Hua, 231
- Chen, Wai-Fah**
see Kim, Yosuk, 1105
- Chen, Xiao-Ping**
see Wilmot, Chester G., 1198
- Chen, Xunhong**
Numerical Simulation of Radial Gas Flow: Effects of Soil Anisotropy, Well Placement and Surface Seal, 797
- Chen, Y. David**
Stream Temperature Simulation of Forested Riparian Areas: I. Watershed-Scale Model Development, 409
Stream Temperature Simulation of Forested Riparian Areas: II. Model Application, 410
- Chen, Yin-Chuan**
River Engineering Work on Nanjing Reach of Lower Yangtze River, 1328
- Chen, ZhiQiang**
see Dogrul, Emin C., 823
- Cheng, Franklin Y.**
Hybrid Control of Seismic Structures with Optimal Placement of Control Devices, 23
- Cheng, Fu-Ping**
see Chao, Chiung-Ju, 101
- Cheng, H. D.**
Novel System for Automatic Pavement Distress Detection, 104
- Cheng, Jing-Ru**
Modeling of 2D Density-Dependent Flow and Transport in the Subsurface, 822
- Cheng, Nian-Sheng**
Modified Logarithmic Law for Velocity Distribution Subjected to Upward Seepage, 787
Pickup Probability for Sediment Entrainment, 675
see Lim, Siow-Yong, 722
see Lim, Siow-Yong, 884
- Cheng, Sheng-Shung**
see Lay, Jiunn-Jyi, 474
- Cheng, Yu**
Network-Based Simulation of Aircraft at Gates in Airport Terminals, 1219
- Cheong, Tae Sung**
see Seo, Il Won, 643
- Cheu, Ruey-Long**
Calibration of FRESIM for Singapore Expressway Using Genetic Algorithm, 1262
- Cheuk, S. L. Au**
see Wong, S. C., 1225
- Cheung, C. Y.**
Pedestrian Route Choices Between Escalator and Stairway in MTR Stations, 1233
- Cheung, Y. K.**
see Cai, C. W., 309

Chevalier

Chevalier, Lizette R.

Experimental and Numerical Evaluation of LNAPL Lens and Polluted Capillary Fringe Thickness, 392

Chew, David

see Wang, Shou Qing, 180

Chiang, Wei-Ling

see Lu, Li-Teh, 262

Chiaverini, John E., P.E.

Construction Congress Keynote Address, 941

Chiew, Yee-Meng

see Cheng, Nian-Sheng, 675

see Cheng, Nian-Sheng, 787

Chiew, Y.M.

see Song, T., 665

Chilton, Richard A.

Pressure Loss Equations for Laminar and Turbulent Non-Newtonian Pipe Flow, 707

Chin, C. O.

see Song, T., 665

Chin, David A.

Evapotranspiration of Melaleuca Forest in South Florida, 807

Chinag, Bo-Chin

see Chen, Jyh-Cherng, 468

Chinowsky, Paul S.

The Civil Engineering Resource Library, 108

Chinyio, Ezekiel A.

Quantification of Construction Clients' Needs Through Paired-Comparisons, 907

Chitale, Srikrishna V.

Estimation of Delta Profile in the Indravati Reservoir, 659

Chiu, Te-Fu

Unsaturated Hydraulic Conductivity of Compacted Sand-Kaolin Mixtures, 540

Cho, I. H.

Performance of Dual Flexible Membrane Wave Barriers in Oblique Waves, 1324

Choa, V.

see Yang, D. Q., 367

Choi, Dong H.

see Elvin, Alex A., 211

Choi, Sokhwan

Fracture Mechanism in Cement-Based Materials Subjected to Compression, 216

Choi, Woo Hee

see Cheng, Jing-Ru, 822

Chopra, Anil K.

see Goel, Rakesh K., 1071

Chou, Ming-Shean

Treatment of Styrene-Contaminated Air Stream in Biotrickling Filter Packed with Slags, 476

Choudhry, Sohail

GIS Errors and Surface Hydrologic Modeling: An Examination of Effects and Solutions, 1190

1998 ASCE TRANSACTIONS

Chow, F. C.

Effects of Time on Capacity of Pipe Piles in Dense Marine Sand, 549

see Jardine, R. J., 541

Chow, W. K.

Comment on the Overall Thermal Transfer Value (OTTV) for Building Energy Control, 56

Numerical Studies on Recent Large High-Rise Buildings Fire, 44

Numerical Verification of Scaling Laws for Smoke Movement in Room-Corridor Structure, 43

Chowdhury, M. R.

Reliability Assessment of Pile-Supported Structural Systems, 1033

Chowdhury, Mostafiz

Experimental Results for Full-Scale Composite and Steel Wickets at Smithland Facility, 121

Christian, John T.

A Probabilistic Evaluation of Earthquake-Induced Slope Failure, 632

Christie, H. D.

see Indraratna, B., 567

Christoph, G.

see Schreck, M., 451

Chrysikopoulos, Constantinos V.

see Lee, Kenneth Y., 477

Chu, V. H.

see Babarutsi, S., 733

Chua, Koon Meng

Martian and Lunar Cold Region Soil Mechanics Considerations, 35

Chua, Manuel

see Schmidt, Lewis C., 1101

Chuang, P. H.

Modeling the Capacity of Pin-Ended Slender Reinforced Concrete Columns Using Neural Networks, 1115

Chuang, Poon-Hwei

Strength of Slender Reinforced Concrete Columns, 1133

Chui, Ying H.

Finite-Element Model for Nailed Wood Joints under Reversed Cyclic Load, 1035

Chung, Se-Woong

Two-Dimensional Simulations of Contaminant Currents in Stratified Reservoir, 731

see Gu, Ruochuan, 1294

Chung, Ying-Chien

Comparison of Autotrophic and Mixotrophic Biofilters for H₂S Removal, 415

Church, Gerald

see Anderson, Michael, 440

Chwang, Allen T.

see Yip, T. L., 260

Chwu, Jong-Wen

see Bai, Hsunling, 521

AUTHOR INDEX

Costa

- Cichoń, Czesław
see Winnicki, Andrzej, 282
see Winnicki, Andrzej, 283
- Cigizoglu, Hikmet Kerem
Application of Gamma Autoregressive Model to Analysis of Dry Periods, 818
- Claeson, Christina
Slender High-Strength Concrete Columns Subjected to Eccentric Loading, 1051
- Clark, James A., ed.
see Castronovo, Joseph P., ed., 1586
- Clark, Robert M.
Chlorine Demand and Trihalomethane Formation Kinetics: a Second-Order Model, 376
Predicting Chlorine Residuals and Formation of TTHMs in Drinking Water, 519
- Clarke, Elizabeth
TEA-21: Something for Everyone, 1507
- Clarke, M. J.
see Wheeler, A. T., 1043
- Clemence, Samuel P., ed.
see Benson, Craig H., ed., 1590
see Ghaly, Ashraf M., 583
- Clemmens, A. J.
Test Cases for Canal Control Algorithms, 853
see Ruiz-Carmona, V. M., 854
see Strelkoff, T. S., 852
- Clemmens, Albert J.
see Strelkoff, Theodor S., 858
- Clouston, Peggy
Interaction Term of Tsai-Wu Theory for Laminated Veneer, 965
- Cloutier, Louis
see Goudreau, Sylvain, 306
- Cofer, William F.
see McGuire, Jeffrey W., 1032
- Cohen, L.
see Rosenfeld, Y., 161
- Coker, Ronald L.
see Sheth, Jayant N., P.E., 574
- Cole, Harry A., P.E.
Using a Programmable Calculator to Find ϕV_n for Steel Beams, 1395
- Cole, Jonathan H., P.E.
Defying Gravity, 1422
- Colliat, J.-L.
Design and Installation of Suction Anchor Piles at Soft Clay Site, 1344
- Collins, Anthony G.
Anaerobic Treatment of Low-Strength Domestic Wastewater Using an Anaerobic Expanded Bed Reactor, 452
see Alderman, Bruce J., 374
see Parker, Philip J., 403
- Collins, James K., P.E.
see Guillory, Blake C., P.E., 1535
- Collins, P.
see Masson, J.-F., 983
- Collins, Patti
Superfund Success, Superfast, 1530
- Connor, Jerome J.
see Elvin, Alex A., 211
- Consoli, Nilo C.
Influence of Fiber and Cement Addition on Behavior of a Sandy Soil, 639
Interpretation of Plate Load Tests on Residual Soil Site, 605
- Constantinescu, G. S.
Numerical Model for Simulation of Pump-Intake Flow and Vortices, 661
- Constantinou, Michael
see Whittaker, Andrew, 1123
- Conte, J. P.
see Peng, B.-F., 291
- Contreras, Iván A.
see Stark, Timothy D., 534
- Converse, Hugh
see Magoon, Orville T., ed., 1549
- Coode, A. M.
see Haug, M. D., 960
- Cook, Neville G. W.
see Nemat, Kamran M., 968
- Cooper, Grahame
see Rezgui, Yacine, 103
- Corapcioglu, M. Yavuz
see Chang, Yoon-Young, 393
see Tuncay, Kagan, 286
- Corbett, Pauline
see Chinyio, Ezekiel A., 907
- Cordero, Rodrigo Caro, P.E.
see Davis, Stephen Keith, P.E., 1485
- Corderoy, John
see Zhuge, Yan, 1055
- Corley, W. Gene
The Oklahoma City Bombing: Summary and Recommendations for Multihazard Mitigation, 1001
see Mlakar, Paul F., Sr., 1002
see Sozen, Mete A., 1003
- Cormier, Charles J.
see Adams, Barry J., 1319
- Cornell, C. Allin
see Bazzurro, Paolo, 1162
- Corona, Edmundo
see Ellison, Mark S., 307
- Corradi, Leone
see Franchi, Alberto, 313
- Corssmit, C. W.
Sell-Off, 1526
- Costa, Manual
see Câmara, António S., 830

- Costes, Nicholas C.**
see Sture, Stein, 25
- Cousineau, Leslie**
Construction Robots: The Search for New Building Technology in Japan, 1555
- Cousins, T. E.**
Field Evaluation of Fatigue Cracking in Diaphragm-Girder Connections, 991
- Laboratory Tests of Bolted Diaphragm-Girder Connections, 63
- Coussot, Philippe**
Direct Determination of Rheological Characteristics of Debris Flow, 749
- Coussy, O.**
Constitutive Modeling of Unsaturated Drying Deformable Materials, 289
- Contellier, D.**
see Reid, M. D., 1236
- Cramer, Steven M.**
see Polley, Craig, 978
- Crespo-Minguillón, César**
Fatigue Reliability Analysis of Prestressed Concrete Bridges, 1177
- Crisp, Norman H., P.E.**
see Pitt, Jerome L., 1385
- Crohn, David M.**
Mixed-Integer Programming Approach for Designing Land Application Systems at a Regional Scale, 394
- Crosnier, B.**
see Djouadi, S., 21
- Crowl, Coby C.**
see O'Malley, Anthony P., P.E., 1501
- Cruz, P. J. S.**
Nonlinear Time-Dependent Analysis of Segmentally Constructed Structures, 1056
- Culmo, Michael P.**
see DeWolf, John T., 837
- Culver, Teresa B.**
Dynamic Optimal Ground Water Remediation by Granular Activated Carbon, 1288
- Cummings, Thomas A., P.E.**
see Dahl, Bernard, 1421
- Cunningham, Michael J.**
see Bubshait, Abdulaziz A., 178
see Bubshait, Abdulaziz A., 1404
- Curran, Mark D.**
Deep Diagnosis (available only in Geoenvironmental Special Issue), 1427
- Curran, R.**
Performance Prediction of Contrarotating Wells Turbine for Wave Energy Converter Design, 201
- Cveticanin, L. J.**
Leipholz Column with Shear and Compressibility, 223
- Czernuszenko, W.**
Drift Velocity Concept for Sediment-Laden Flows, 765
- Dagher, H. J.**
Reliability of Transmission Structures Including Nonlinear Effects, 1130
- Dahab, M. F.**
see Goderya, F. S., 1300
- Dahl, Bernard**
A Tale of Two Bids, 1421
- Daily, William D., III**
see Rollins, Kyle M., 563
- Dakoulas, Panos, ed.**
Geotechnical Earthquake Engineering and Soil Dynamics III, 1570
- Dalal, Vikram A.**
see Boothby, Thomas E., 1026
- Dallaire, Eric**
High-Performance Powder, 1407
- Dall'Asta, Andrea**
Nonlinear Behavior of Externally Prestressed Composite Beams: Analytical Model, 1090
- Dalmijn, W. L.**
see Rikers, R. A., 513
- Daly, Steven F.**
Thermal Ice Growth: Real-Time Estimation, 81
- Daniel, David E.**
Slope Stability of Geosynthetic Clay Liner Test Plots, 584
see Lai, Jiunnren, 528
- Darwin, David**
see Benitez, Manuel A., 1147
- Datta, T. K.**
see Sarbjee, S., 1029
see Suneja, B. P., 297
- Dauda, Taiwo**
see Orth, Robert, 1378
- Davalos-Sotelo, Raymundo**
Shear Strength of Mexican Pine. Part II: Resistance Factor for LRFD, 1075
- Davidson, M. J.**
Hybrid Model for Prediction of Initial Dilutions from Outfall Discharges, 782
- Davidson, Mark A.**
see Huntley, David A., 1359
- Davidson, William A., P.E.**
Below Boston's New Bridge, 1528
- Davie, John R., ed.**
see Dusenberry, Donald O., ed., 1561
- Davies, Michael H.**
see Li, Bingjun, 670
- Davis, Alastair C.**
Flow Measurement in Sloping Channels with Rectangular Free Overfall, 738
- Davis, Allen P.**
Washing of Various Lead Compounds from a Contaminated Soil Column, 503
see Giffin, Steve D., 485

AUTHOR INDEX

DeWolf

- Davis, C. A.
Seismic Analysis of Large-Diameter Flexible Under-ground Pipes, 619
- Davis, Stephen Keith, P.E.
Cliffside Correction, 1485
- Dawson, Elizabeth
see Thalhamer, Michael, P.E., 1498
- Day, Robert W.
Settlement Behavior of Posttensioned Slabs-on-Grade, 995
- de Araújo, José Carlos
Experimental Evaluation of 2-D Entropy Model for Open-Channel Flow, 771
- de Béjar, Luis A.
Forces on Edge-Hinged Panels in Gradually Varied Flow, 743
- de Brito, J.
Concrete Bridge Management: From Design to Maintenance, 1393
- de la Cruz, Rodolfo V.
see Polley, Craig, 978
- de la Garza, Jesus
Simulating Highway Infrastructure Management Policies, 938
- de la Garza, Jesus M.
Analysis of Safety Indicators in Construction, 177
- de Miguel, S.
see Nguyen, T., 312
- de Neufville, Richard
Benchmarking for Design of Major Airports Worldwide, 1246
- De Roeck, G.
see Wahab, M. M. Abdel, 74
- Deason, Jonathan P.
Toward Improved Highway Quality: Lessons from Western Europe, 906
- Decker, Lisa
see de la Garza, Jesus M., 177
- Deganutti, Andrea
see Coussot, Philippe, 749
- DeHaven, Thomas, P.E.
Casting Hot and Cold, 1439
- Deierlein, Gregory G.
Summary of SAC Case Study Building Analyses, 1012
see El-Tawil, Sherif, 371
- Del Giudice, Giuseppe
see Hager, Willi H., 887
- Delatte, Norbert J., Jr., P.E.
Investigating Performance of Bonded Concrete Overlays, 996
- Deletic, Ana B.
Evaluation of Water Quality Factors in Storm Runoff from Paved Areas, 479
- Deltour, J. L.
see Strelkoff, T. S., 852
- Deltour, Jean-Luc
Introduction of Smith Predictor into Dynamic Regulation, 856
- Delwar, Murshed
see Taha, Ramzi, 974
- Demirdjian, Sevak
see Redwood, Richard, 1154
- Demirer, Göksel N.
Toxicity of Acrylic Acid to Acetate-Enriched *Methanosarcina* Cultures, 413
- deMonsabert, Sharon
Integrated Energy and Water Conservation Modeling, 199
- Dempsey, J. P.
see Adamson, R. M., 83
- Dempsey, John P.
see Parker, Philip J., 403
- Demsetz, Laura A., ed.
Robotics 98, 1592
- Denes, Thomas A.
Getting the GIST of Costs, 1478
- Denesh-Ashtiani, F. A.
see Elnashai, A. S., 1118
- Deng, Baolin
see Burris, David R., 497
- Deng, Xuejun
see Sun, Lu, 1248
- Dennis, Michael L.
Hydraulic Conductivity of Compacted Soil Treated with Biofilm, 536
- Deo, M. C.
see Thirumalaiah, Konda, 794
- DePinto, Joseph V.
see Atkinson, Joseph F., 419
- deRincón, Oladis T.
see Silva-Araya, Walter F., 1589
- Deschamps, R.
Extending the Period of Data Retrieval for Vertical Inclinometers, 569
- Deschamps, Richard J.
Using FBC and Stoker Ashes as Roadway Fill: A Case Study, 629
see Leonards, Gerald A., 988
- Desideri, A.
see Pagano, L., 611
- DeStefano, Paul D.
Method for Estimating Transition Probability in Bridge Deterioration Models, 833
- Devanny, Joseph S.
Clearing the Air, Biologically, 1495
Monitoring Biofilters Used for Air Pollution Control, 1370
- DeWolf, John T.
Connecticut's Bridge Infrastructure Monitoring Program for Assessment, 837
see Zhao, Jun, 838

Dey, Subhasish

Choke-Free Flow in Circular Channels with Increase in Bed Elevations, 894

End Depth in Circular Channels, 748

Dezi, Luigino

see Dall'Asta, Andrea, 1090

Dharani, L. R.

see Flocker, F. W., 37

Di Stefano, Costanza

Calculating Average Filling Rock Diameter for Gabi-on-Mattress Channel Design, 760

Dial, Stephen, P.E.

Smokestack Rescue, 1457

Diamadopoulos, Evan

see Katsamaki, Anastasia, 395

DiBattista, Jeffrey D.

Fatigue Strength of Riveted Connections, 1111

Dibrov, Igor A.

see Voronin, Nicholai N., 427

Dickey, T. D.

see Petrenko, A. A., 713

Dickinson, Rebecca J.

see Abraham, Dulcy M., 157

Diehl, Nathan B.

see Rollins, Kyle M., 563

Diekmann, James

see Ashley, David, 839

Diekmann, James E.

Assessing Cost Uncertainty: Lessons from Environmental Restoration Projects, 191

DiGiano, Francis A.

see Braghetta, Anne, 505

DiGuseppi, William H., P.E.

see Carter, Carrie J., 1521

DiMillio, Albert F.

see Bruce, Donald A., 1529

Dinehart, David W.

Comparison of Static and Dynamic Response of Timber Shear Walls, 1100

Diniz, Sofia M. C.

Reliability Assessment of High-Strength Concrete Columns, 273

Diplas, Panayiotis

see Vigilar, Gregorio G., Jr., 774

Dittrich, Andreas

see Wang, Zhao Yin, 645

Divinsky, Michael

Probabilistic Pavement Design Based on the Generalized Equation, 1268

Diz, Harry R.

Fluidized Bed for Removing Iron and Acidity from Acid Mine Drainage, 459

Djouadi, S.

Active Control of Tensegrity Systems, 21

Dobry, Ricardo

see Gadre, Aniruddha, 631

see Taboada-Urtuzástegui, Víctor M., 637

Dock, Daniel A.

see Johnson, Peggy A., 736

Dodd, Nicholas

Numerical Model of Wave Run-Up, Overtopping, and Regeneration, 1332

Dogrul, Emin C.

Prediction of Subsurface Storm Flow in Heterogeneous Sloping Aquifers, 823

Domalik, Daniel E.

see Boothby, Thomas E., 1026

Domínguez, R.

see Jiménez, B. E., 1281

Donahey, Rex C.

see Benitez, Manuel A., 1147

Dorn, J. L.

see Borden, R. C., 463

Dorothy, Paul W.

Michigan's Commercial Driver's License (CDL) Experience, 1217

Doroudian, Macan

see Vucetic, Mladen, 580

Douglas, Robert A.

see Slaughter, Scott H., P.E., 1518

Downey, Elizabeth A., ed.

Civil Engineering in the Asia Region: Asian Infrastructure, Sustainable Development and Project Management, 1550

Doytsher, Yerahmiel

see Filin, Sagi, 1192

Drew, Donald R.

see de la Garza, Jesus, 938

Drew, Donald R., P.E.

see Nam, Do H., P.E., 1222

Driller, Michael W.

see Boulanger, Ross W., 524

Driver, Robert G.

Cyclic Test of Four-Story Steel Plate Shear Wall, 1037
FE Model of Steel Plate Shear Wall, 1038

Duffell, Roger

Toward the Environment and Sustainability Ethic in Engineering Education and Practice, 1020

Duffey, Thomas A.

see Farrar, Charles R., 61

Duijnsveld, W. H. M.

see Sulekha, 870

Duke, L. Donald, P.E.

Parameter-Induced Uncertainty in Modeling Vadose Zone Transport of VOCs, 423

Duke, Michael B.

Lunar Polar Ice: Implications for Lunar Development, 33

AUTHOR INDEX

Elghazouli

- Dukes, Michael D.
Modeling BMPs to Optimize Municipal Wastewater Land Treatment System, 516
- Dunlap, Wayne A.
see Shang, Julie Q., 603
- Duplancic, Neno, P.E.
Automatic Savings, 1463
- Durnford, Deanna S.
see Marinelli, Fred, 890
- Dusenberry, Donald O., ed.
Effects of Construction on Structures, 1561
- Dusenberry, Donald O., P.E.
Walls of Defense, 1437
- Dutta, Utpal
Compatibility and Rheological Study of ASR Asphalt Binder, 956
- Duval, Lee A.
see Piver, Warren T., 429
- Dvorak, George J.
see Baweja, Sandeep, 323
- Dwyer, Stephen F.
Alternative Landfill Covers Pass the Test, 1496
- Dyer, John
see Helwany, Sam, 1258
- Ead, Samir Ali
Double-Leaf Gate for Energy Dissipation below Regulators, 778
- Easa, S. M.
Design Requirements of Equal-Arc Unsymmetrical Vertical Curves, 1247
see Hassan, Y., 1200
see Hassan, Y., 1240
- Easa, Said, ed.
Transportation, Land Use, and Air Quality: Making the Connection, 1602
- Easa, Said M.
GIS Technology for Civil Engineering Education, 1016
Model for Sight Distance Analysis of Uncontrolled Intersections, 1215
Smooth Surface Approximation for Computing Pit Excavation Volume, 1189
Three-Arc Vertical Curve for Constrained Highway Alignments, 1216
see Hamed, Mohammad M., 1232
see Hamed, Mohammad M., 1278
- Easson, W. J.
see Skyner, D. J., Hon. F., 1321
- Eberhard, Marc O.
see Price, Thomas E., 1128
- Ebisuda, Kazushi
see Kawazoe, Keizi, 267
- Economopoulos, Alexander P.
see Economopoulou, Maria A., 390
- Economopoulou, Maria A.
Rapid Sizing and Performance Evaluation of Submarine Outfalls with Line Diffusers, 390
- Edge, Billy L.
Determination of Velocity in Estuary for Bridge Scour Computations, 720
Ocean Wave Measurement and Analysis, 1583
- Edgerton, William W., P.E.
Site Investigations: A Guide (available in Geoenvironmental Special Issue only), 1470
- Edil, Tuncer B.
see Pekarun, Osman O., 1368
see Tatlisoz, Nilay, 628
- Edwards, Nicholas P.
FE Analysis of Tucker High School Roof Using Nonlinear Geometry and Creep, 1132
- Ehart, R. J. A.
see Tschegg, E. K., 1255
- Eid, Hisham T.
see Stark, Timothy D., 14
see Stark, Timothy D., 623
- Einstein, Herbert H.
see Sinfield, Joseph V., 145
see Zhang, Lianyang, 579
- Eisenhauer, Dean
see Enciso-Medina, Juan, 680
- Eitan, O.
see Shemer, L., 1360
- Eiteman, Mark A.
see Wu, Jiangning, 406
- Eith, Anthony, P.E.
see Whitty, Paul, P.E., 1486
- El Assiouti, Ibrahim
see Grenney, William J., 876
- El Echary, Hazem
see Mirmiran, Amir, 136
- El Geriani, A. M.
Cost-Effectiveness Analyses of Libya's Water Supply System, 1316
- El Hussein, H. M.
Asphalt Concrete Damage Associated with Extreme Low Temperatures, 986
- Elango, K.
see Kumar, C. Nagaraju, 677
- Elarabawy, Mohsen
Water Resources in Egypt: Strategies for Next Century, 1315
- El-Bibany, Hossam
see Abudayyeh, Osama, P.E., 70
- El-Bkaily, Marwan
Plastic Buckling of Unanchored Roofed Tanks Under Dynamic Loads, 288
- Elgamal, Ahmed-W.
see Adalier, Korhan, 573
- Elgar, Steve
see Raubenheimer, B., 1341
- Elghazouli, A. Y.
see Elnashai, A. S., 1118

Elhelbawey, Maged I.

Effective Torsional Constant for Restrained Open Section, 1171

Ellery, W. N.

see Merry, C. L., 1191

Ellett, Brian G. S.

see Davis, Alastair C., 738

Ellingwood, Bruce

Combining Snow and Earthquake Loads for Limit States Design, 10

see Bhattacharya, Baidurya, 328

Ellis, Hollie

see Feldman, Alexander I., 1468

Ellis, J. S.

Latticed Mast Structures, 1047

Ellison, Mark S.

Plastic Collapse Analysis of T-Beams Under Bending, 307

Elnashai, A. S.

Response of Semirigid Steel Frames to Cyclic and Earthquake Loads, 1118

El-Sawy, Khaled

Stability of Loosely Fitted Liners Used to Rehabilitate Rigid Pipes, 1169

Elsayed, Ashraf

see Lindly, Jay K., 1213

El-Tawil, Sherif

Stress-Resultant Plasticity for Frame Structures, 371

Elton, David J., ed.

see Vipulanandan, C., ed., 1588

Elvin, Alex A.

Effect of Transverse Shear Deformation on Elastic Moduli of Thin Ice Plates, 211

Elvin, David

Sky High, 1513

Elwi, Alaa E.

see Driver, Robert G., 1037

see Driver, Robert G., 1038

see Mau, S. T., 1054

Elzarka, Hazem M.

see Tabatabai-Gargari, Mousa, 170

Emch, Pamela G.

Management Model for Conjunctive Use of Coastal Surface Water and Ground Water, 1295

Emmons, Peter H.

see Vaysburd, Alexander M., P.E., 1410

Enciso-Medina, Juan

Infiltration Model for Furrow Irrigation, 860

Enfield, C. G.

see Annable, Michael D., 431

Englot, Joseph M.

Challenges Met in Engineering Newark International Airport Structures, 1394

Enright, Michael P.

Failure Time Prediction of Deteriorating Fail-Safe Structures, 1176

Service-Life Prediction of Deteriorating Concrete Bridges, 1059

Epstein, Howard I.

Analysis and Design Assumptions for Continuous Cold-Formed Purlins, 1392

Ernzen, James J.

see Flora, Gwen, 1405

Esfandiari, M.

Suitability of Selected Flow Equations and Variation of Manning's n in Furrow Irrigation, 862

Eskins, William A.

Construction of the New Coleman Bridge: Fifth Roebing Lecture, 1997, 160

Espinoza, Carlos

Temporal Moments Analysis of Transport in Chemically Heterogeneous Porous Medium, 825

Essamin, O.

see El Geriani, A. M., 1316

Ettala, M.

Full-Scale Leachate Treatment Using New Evaporation Technology, 1371

Ettema, R.

Ice-Tank Data on Brash-Ice Loads against Barges, 88
Local Scour at Skewed Piers, 737

Ettema, Robert

Scale Effect in Pier-Scour Experiments, 723

Evans, Andrew

see Thomas, Natacha E., 1238

Evans, Mark D.

see Rollins, Kyle M., 563

Everett, John G.

Drywall Joint Finishing: Productivity and Ergonomics, 181

Time-Lapse Video Applications for Construction Project Management, 164

Evelt, Jack B.

see Wu, Jy S., 444

Evseeva, Elena G.

see Atanow, Gennadii A., 646

Eymard, R.

see Coussy, O., 289

Fabrikant, V. I.

Stress Intensity Factors and Displacements in Elastic Contact and Crack Problems, 327

Faella, Ciro

Experimental Analysis of Bolted Connections: Snug Versus Pretensioned Bolts, 1108

Fafard, Mario

Dynamic Analysis of Existing Continuous Bridge, 60

Fairweather, Robert J.

Hydrogen Sulfide Production During Decomposition of Landfill Inputs, 414

Fairweather, Virginia

How to Succeed in Business..., 1511

Santa Fe Sensation, 1450

Test Wall Promises Big Savings (Available in Geo-Environmental Special Issue Only), 1516

AUTHOR INDEX

Finlayson

- Fajfar, P.**
see Chai, Y. H., 1124
- Falconer, Roger A.**
see Wang, Hong, 753
- Famiyesin, Olubayo O. R.**
 Development of Charts for Partially Clamped Slabs by Finite-Element Predictions, 1168
 Optimized Design Charts for Fully Restrained Slabs by FE Predictions, 1087
- Fan, Chi-Yuan**
see Field, Richard, 1299
- Fan, Henry S. L.**
see Lum, K. M., 1223
- Faniran, Olusegun O.**
 Interactions Between Construction Planning and Influence Factors, 169
- Fannelop, T. K.**
see Riess, I. R., 754
- Fantilli, Alessandro P.**
 Flexural Deformability of Reinforced Concrete Beams, 1139
- Faravelli, Lucia**
see Bontempi, Franco, 317
- Farrar, Charles R.**
 Bridge Modal Properties Using Simplified Finite Element Analysis, 61
- Fayek, Aminah**
 Competitive Bidding Strategy Model and Software System for Bid Preparation, 139
- Fazio, P.**
see Savin, D., 112
- Fazio, Paul**
see Korothe, Surej R., 39
see Korothe, Surej R., 47
see Korothe, Surej R., 55
see Mokhtar, Ahmed, 98
- Featherman, W. David**
see Diekmann, James E., 191
- Fei, Xiangjun**
see Wang, Guangqian, 712
- Feldman, Alexander I.**
 Keeping Tabs on Two Tunnels (available in Geoenvironmental Special Issue only), 1468
- Feldman, Arlen D.**
see Kull, Daniel W., 792
- Feldman, Dorel**
see Banu, Dorina, 963
see Korothe, Surej R., 39
see Korothe, Surej R., 47
see Korothe, Surej R., 55
- Fellows, James F. R.**
see Haimes, Yacov Y., 847
- Feng, Maria Q.**
 Optically Powered Electrical Accelerometer and Its Field Testing, 271
- Fenner, R. A.**
 Physical Modeling of Hydrodynamic Separators Operating with Underflow, 480
- Fenton, Gordon A.**
see Griffiths, D. V., 598
- Fenves, Gregory L.**
see Lee, Jeeho, 316
- Fergen, Robert E.**
see Huang, Hening, 658
- Fernandes, João Pedro**
see Câmara, António S., 830
- Fernando, D. Achela**
 Runoff Forecasting Using RBF Networks with OLS Algorithm, 815
- Fernando, N. S. M.**
 Elastic Analysis of Buried Pipes under Surface Patch Loadings, 591
- Ferretti, Daniele**
see Fantilli, Alessandro P., 1139
- Ferrick, M. G.**
 Analysis of Linear and Monoclinic River Wave Solutions, 734
- Ferrington, Leonard C., Jr.**
see Pitt, Jerome L., 1385
- Ferro, Vito**
see Di Stefano, Costanza, 760
- Feyen, Jan**
see Liu, Fubo, 855
- Field, Richard**
 Urban Wet-Weather Flow Management: Research Directions, 1299
- Field, Richard V., Jr.**
 Reliability-Based Approach to Linear Covariance Control Design, 229
- Filin, Sagi**
 Estimating the Accuracy of Photogrammetric Data—Mechanism and Implementation, 1192
- Filippou, Filip C.**
see Ayoub, Amir, 1058
see Balan, Toader A., 1057
see Neuenhofer, Ansgar, 1102
see Schulz, Mauro, 249
- Finaish, Fathi**
 Aerodynamic Performance of an Airfoil with Step-Induced Vortex for Lift Augmentation, 17
- Finch, Gordon R.**
see Gyürek, Lyndon L., 469
- Findikakis, Angelos N.**
 Marine Tailings Disposal Simulation, 691
- Fink, Michael**
 Resources for Ongoing Professional Development, 911
- Finke, Michael R.**
 A Better Way to Estimate and Mitigate Disruption, 197
- Finlayson, Frank**
see Ashley, David, 839

Finno

Finno, Richard J., ed.

Design and Construction of Earth Retaining Systems, 1558

Impulse Response Evaluation of Drilled Shafts, 615
see Mooney, Michael A., 630

Fipps, G.

see Basahi, J. M., 878

Fischer, Martin

see Akinci, Burcu, 904

Fisher, John S.

see Edge, Billy L., 720

Fitzgerald, Paula A.

see Laiho, Douglas R., 1477

Flack, David A.

The Case for a Technology Management Institute, 897

see Russell, Jeffrey S., P.E., 935

Flanders, Stephen N.

Laboratory Tests of Cable-Based Roof Moisture Detection System, 54

Flocker, F. W.

Low Velocity Impact Resistance of Laminated Architectural Glass, 37

Flood, Ian, ed.

Artificial Neural Networks for Civil Engineers: Advanced Features and Applications, 1546

Flora, Gwen

Field-Level Management's Perspective of Design/Build, 1405

Flórez-López, Julio

see Thomson, Edward, 1143

Floris, Claudio

Stochastic Analysis of Load Combination, 320

Fonder, Ghislain A.

see Yang, Fuheng, 298

Fontane, Darrell G.

see Kwanyuen, Bancha, 1296

Foote, Gary R.

TCE and Flow Monitoring Methods Using an Existing Water Supply Well, 441

Foppe, Larry E.

see Safferman, Steven I., 375

Forsman, Jonas

see Wörmann, Anders, 388

Fortner, Brian

I.T.S. On the Way, 1512

The San Francisco Connection, 1473

Shoring Up Lake Shore Drive, 1472

see Bert, Ray, 1459

Foster, Stephen J.

Cover Spalling in HSC Columns Loaded in Concentric Compression, 1174

see Liu, Jing, 1135

Foutch, Douglas A.

see Tobias, Daniel H., 1

1998 ASCE TRANSACTIONS

Fowler, David W., P.E.

see Delatte, Norbert J., Jr., P.E., 996

Fox, Patrick J.

Internal Shear Strength of Three Geosynthetic Clay Liners, 612

Franchi, Alberto

Determination of Bifurcation and Limit Points, 313

François, Raoul

Influence of Service Cracking on Reinforcement Steel Corrosion, 952

Frangopol, Dan M., ed.

Optimal Performance of Civil Infrastructure Systems, 1584

see Diniz, Sofia M. C., 273

see Enright, Michael P., 1059

see Enright, Michael P., 1176

see Salari, M. Reza, 1148

Frank, K. H.

see Hamilton, H. R., III, 64

see Hamilton, H. R., III, 65

Frank, Lawrence D.

Improving Air Quality Through Growth Management and Travel Reduction Strategies, 1272

Frank, Melissa

see Sture, Stein, 25

Franssen, J. M.

Stability of Steel Columns in Case of Fire: Experimental Evaluation, 1042

Fratta, Dante

see Santamarina, J. Carlos, 1579

Frederick, G. R.

see Little, R. R., 209

Frederick, Gerald R.

see Mabsout, Mounir E., 68

Fredericks, Jeffrey W.

Decision Support System for Conjunctive Stream-Aquifer Management, 1289

Fredley, John

see Hinze, Jimmie, 147

Fredrickson, Ken

Design Guidelines for Design-Build Projects, 905

Fredsoe, J.

see Sumer, B. M., 1351

Freeman, Reed B.

see Grogan, William P., 1252

Freidlander, Mark C.

Realizing Engineer-Led Design/Build, 1444

Freidrichs, Edwin C., P.E.

see Slade, Lee, P.E., 1416

Fridley, Kenneth J., ed.

Wood Engineering in the 21st Century: Research Needs and Goals, 1611

Friedlander, Mark C.

Design-Build Solutions, 948

AUTHOR INDEX

Garrido

- Friedman, Scott**
see Jepson, William, 1460
- Fritchen, David R.**
 Kansas State University Architectural Engineering, 40
- Fritz, Hermann M.**
 Hydraulics of Embankment Weirs, 758
- Fronteddu, Luciano**
 Static and Dynamic Behavior of Concrete Lift Joint Interfaces, 1173
- Frost, Craig**
see Silliman, Stephen E., 434
- Frost, J. David, ed.**
 Imaging Technologies: Techniques and Applications in Civil Engineering, 1577
see Luna, Ronaldo, 96
- Fu, Chung C.**
see Elhelbawey, Maged I., 1171
- Fu, Yaomin**
 Comparative Study of Frames using Viscoelastic and Viscous Dampers, 1082
see Kasai, Kazuhiko, 1081
- Fujino, Y.**
see Wilde, K., 295
- Fukushima, Yusuke**
 Numerical Simulation of Gravity Current Front, 714
- Fung, T. C.**
 Shear Stiffness for Z-Core Sandwich Panels, 1113
- Fwa, T. F.**
 Graphical Solutions for Back-Calculation of Rigid Pavement Parameters, 1206
see Shuo, Li, 1266
- Gabriel, B.**
see Teng, J. G., 325
- Gadre, Aniruddha**
 Lateral Cyclic Loading Centrifuge Tests on Square Embedded Footing, 631
- Gaines, W. A.**
see Kim, B. R., 507
- Galano, L.**
 Reinforcement of Masonry Walls Subjected to Seismic Loading Using Steel X-Bracing, 1121
- Gallinatti, John D.**
see Foote, Gary R., 441
see Warner, Scott D., 435
- Galloway, Rodney G., ed.**
 Space 98, 1596
- Gambatese, John A.**
 Liability in Designing for Construction Worker Safety, 50
- Gan, Wenshui**
 Static and Dynamic Behavior of Steel Braces Under Cyclic Displacement, 215
- Ganapathi, M.**
 Dynamic Instability of Laminates Subjected to Temperature Field, 347
- Gandhi, P.**
 Fatigue Behavior of T-Joints: Square Chords and Circular Braces, 1068
- GangaRao, Hota V. S.**
 Bending Behavior of Concrete Beams Wrapped with Carbon Fabric, 1024
see Kumar, Sanjeev V., 1025
- Gangarao, Hota V. S.**
see Nagaraj, V., 120
- Ganguly, C.**
 Metal Ion Leaching from Contaminated Soils: Model Development, 407
 Metal Ion Leaching From Contaminated Soils: Model Calibration and Application, 512
- Ganji, Vahid**
 Automated Inversion Procedure for Spectral Analysis of Surface Waves, 595
- Ganzerli, Sara**
see Pantelides, Chris P., 1060
- Gao, Jian**
see Chang, Ching S., 370
- Gao, Shengbin**
 Ductility Evaluation of Steel Bridge Piers with Pipe Sections, 240
 Ductility of Steel Short Cylinders in Compression and Bending, 227
- Gao, Xiao-Wei**
see Wang, Yan-Chang, 1062
- García, Julio**
see Sanchez, Luis, 699
- Garcia, Luis A.**
see Hashmi, Mansoor A., 865
- García, Marcelo**
see Niño, Yarko, 268
see Niño, Yarko, 764
- Gard, A.**
see Sullivan, T. M., 430
- Gardarsson, Sigurdur**
see Reed, Dorothy, 257
- Gardella, D.**
see Saiidi, M., 69
- Gardiner, Paul D.**
 Conflict in Small- and Medium-Sized Projects: Case of Partnering to the Rescue, 900
- Garduño, H.**
see Jiménez, B. E., 1281
- Garg, N. K.**
see Sen, D. J., 745
- Garga, Vinod K.**
see Li, Bingjun, 670
see Li, Bingjun, 671
- Garrett, James H., Jr.**
see Kilicote, Han, 102
- Garrido, J. M.**
see van Benthum, W. A. J., 402

Gassman, Sarah L.

see Finno, Richard J., 615

Gates, William E.

Summary Interpretation of SAC Survey Data on Damaged Welded Steel Moment Frames, 1009

Gattesco, Natalino

Strength and Deformability of Wood beneath Bolted Connectors, 1046

Ge, Hanbin

see Gao, Shengbin, 227

see Gao, Shengbin, 240

Ge, L.

Damage Identification Through Regularization Method I: Theory, 217

Damage Identification Through Regularization Method II: Applications, 218

Gebel, Rolf

see Sadek, Shafik E., 387

Geist, Robert

Four-Stage Model for Predicting Creep Behavior, 219

Geldert, Darrin

Modeling Dissolved Gas Supersaturation Below Spillway Plunge Pools, 706

Genereux, David

A Canal Drawdown Experiment for Determination of Aquifer Parameters, 827

Genna, Francesco

see Franchi, Alberto, 313

Gentry, T. Russell

see Bank, Lawrence C., 1237

George, John

see McCartney, Bruce L., 1578

Georgiadis, Michael

Lateral Pressure on Sheet Pile Walls Due to Strip Load, 533

Gerasimo

see Charlet, Laurent, 377

Gergely, Ioan

Bridge Pier Retrofit Using Fiber-Reinforced Plastic Composites, 135

Germaine, John T.

see Zreik, Diana A., 772

Gessler, Daniel

Prediction of Discontinuity in Stage-Discharge Rating Curves, 677

Gessler, Johannes

see Gessler, Daniel, 677

Gessner, George A.

Bridge Within a Bridge, 1505

Geyer, Wayne, P.E.

Out of Sight, Out of Time, 1431

Geyskens, Philippe

Bayesian Prediction of Elastic Modulus of Concrete, 1034

Ghaboussi, Jamshid

see Bani-Hani, Khaldoun, 247

see Shrestha, Sharad Man, 1167

Ghaeli, Reza

Spatial Variations in Travel Behavior within Greater Toronto Area, 1218

Ghaemian, M.

see Ghobarah, A., 356

Ghaffori, Nader

Prediction of Freezing and Thawing Durability of Concrete Paving Blocks, 957

Ghaly, Ashraf M.

Pullout Performance of Inclined Helical Screw Anchors in Sand, 583

Ghidaoui, Mohamed S.

Energy Estimates for Discretization Errors in Water Hammer Problems, 692

Ghobarah, A.

Experimental Study of Small Scale Dam Models, 356

Ghosh, Ambarish

Hydraulic Conductivity and Leachate Characteristics of Stabilized Fly Ash, 472

Giannopoulos, A.

see Millard, S. G., 976

Gibbie, Kenneth, P.E.

Discovering Your Niche, 1537

Gibson, G. Edward, Jr.

see LeBlond, David, 174

Giffin, Steve D.

Prediction of Carbon BTEX Adsorption Capacity Using Field Monitoring Data, 485

Gijsbers, P. J. A.

see El Geriani, A. M., 1316

Gilardi, Gabriele

see Modi, Vinod J., 19

Gilbert, R. B.

see Low, B. K., 559

Gilbert, Robert B.

Uncertainty in Back Analysis of Slopes: Kettleman Hills Case History, 634

see Benson, Craig H., ed., 1590

Giray, M.

see Kalaycioglu, S., 28

Giuriani, Ezio

Interrelation of Splitting and Flexural Cracks in R.C. Beams, 1138

Glagola, Charles R.

see Herbsman, Zohar J., 188

Gläser, H.-R.

see Schreck, M., 451

Glass, Gareth K.

see Buenfeld, Nick R., 979

Gluck, J.

see Warszawski, A., 11

Gobbi, Mauricio F.

see Melo, Eloi, 1322

AUTHOR INDEX

Gribb

- Godbole, P. N.**
Hyperbolic Cooling Towers with Bulge Imperfections, 359
- Goderya, F. S.**
Environmental Impact Evaluation of Spatial Management Practices Using Simulations with Spatial Data, 1300
- Goebel, Randy**
see McCabe, Brenda, 99
- Goel, Manmohan K.**
see Jain, Sharad K., 1285
- Goel, N. K.**
Multivariate Modeling of Flood Flows, 663
- Goel, Rakesh K.**
Period Formulas for Concrete Shear Wall Buildings, 1071
- Goel, Subhash C.**
see Khuntia, Madhusudan, 1145
- Goh, Anthony T. C.**
see Chuang, P. H., 1115
- Gold, Vladimir M.**
Analysis of Penetration Resistance of Concrete, 248
- Gold, William J.**
see Khalifa, Ahmed, 138
- Good, Mary Lowe**
Collaborations Keynote Address, 921
- Goodings, Deborah J.**
see Yang, Dan, 84
see Yang, Dan, 636
- Goodman, N. J.**
see Ferrick, M. G., 734
- Goodman, Richard E.**
Karl Terzaghi: The Engineer as Artist, 1580
- Gordin-Katz, Rachel**
see Shani, Uri, 889
- Gordon, Bill**
see Corssmit, C. W., 1526
- Gordon, K. R.**
see Levy, C., 232
- Goring, Derek G.**
see Nikora, Vladimir I., 721
- Gosselin, David C.**
see Chen, Xunhong, 797
- Goto, Yoshiaki**
Classification System for Rigid and Semirigid Connections, 1106
FEM Analysis for Hysteretic Behavior of Thin-Walled Steel Columns, 1163
Localization of Buckling Patterns in Cylinders under Cyclic Loading, 357
- Gotthard, Doug**
see Roberts, Jesse, 790
- Goudreau, Sylvain**
Bending Energy Dissipation of Simplified Single-Layer Stranded Cable, 306
- Goulter, Ian C.**
see Bouchart, François J.-C., 1314
see Xu, Chengchao, 1304
- Gourley, Brett C.**
see Hajjar, Jerome F., 1014
- Goussard, Jean**
see Rogers, David C., 851
- Govindaraju, Rao S.**
Effective Erosion Parameters for Slopes with Spatially Varying Properties, 861
- Grabow, Garry L.**
Stream Gauging of Torrential Rivers of Eastern Eritrea, 816
- Grace, N. F.**
Behavior and Ductility of Simple and Continuous FRP Reinforced Beams, 137
- Graf, W. H.**
see Yulistiyo, B., 696
- Graham, J.**
see Zhou, Y., 339
- Graham, Wendy D.**
see Annable, Michael D., 431
- Gramet, J.-C.**
see Colliat, J.-L., 1344
- Grasso, D., P.E.**
see Hu, H.-L., 455
see Hu, H.-L., 456
- Gräter, Stefan F.**
see Delatte, Norbert J., Jr., P.E., 996
- Grawitz, B.**
see Clemmens, A. J., 853
- Grayson, Paul E.**
Not Your Father's Strain Gauge, 1480
- Green, M. F.**
see Campbell, T. I., 77
- Green, Mark F.**
see Braimah, Abass, 133
- Greenwell, David P.**
see Ali, Mir M., 1423
- Greer, James M., Jr.**
Tire Contact Using Two-Dimensional Finite Elements, 250
- Greer, Richard**
see Kim, Young-Suk, 1212
- Greer, William, P.E.**
see Wasserman, Edward P., P.E., 1446
- Grenney, William J.**
Cost Allocation for Multiuse Water Systems in Egypt, 876
- Grewal, M. S.**
see Holtschlag, D. J., 812
- Gribb, Molly M.**
Development of Cone Penetrometer Method to Determine Soil Hydraulic Properties, 601

Griffiths, D. V.

Probabilistic Analysis of Exit Gradients Due to Steady Seepage, 598

Grigg, Neil S.

Universities and Professional Associations: Partnerships for Civil Engineering Careers, 916

Grigoriu, Mircea

Simulation of Stationary Non-Gaussian Translation Processes, 220

Grimm, Mike

Floodplain Management, 1434

Grimshaw, H. J.

see Shih, George, 508

Grivas, Dimitri A.

see DeStefano, Paul D., 833

Großwig, S.

see Schreck, M., 451

Grodner, Michael, P.E.

Cure for Thinning Concrete, 1532

Grogan, William P.

Impact of FWD Testing Variability on Pavement Evaluations, 1252

Groton, James P.

Weighing the Options, 950

Gschwend, Philip M.

see Ravens, Thomas M., 1327

Gu, Ruochuan

Reservoir Flow Sensitivity to Inflow and Ambient Parameters, 1294

see Chung, Se-Woong, 731

Gu, Shengping

see Huang, Bingzhao, 200

Guardiario, Jose

see Genereux, David, 827

Gucunski, Nenad

see Ganji, Vahid, 595

Gui, Shengxiang

Overtopping Reliability Models for River Levee, 786
Simplified Dynamic Reliability Models for Hydraulic Design, 687

Guillory, Blake C., P.E.

Wetland Wonder, 1535

Guin, J.

Coupled Soil-Pile-Structure Interaction Analysis under Seismic Excitation, 1072

Gulliver, John

see Geldert, Darrin, 706

Gulliver, John S.

Predictive Capabilities in Oxygen Transfer at Hydraulic Structures, 726

see Hibbs, David E., 465

see Weiss, Peter T., 715

Gunaydin, H. Murat

see Arditi, David, 163

Gunn, Alastair S.

see Vesilind, P. Aarne, 1018

Guo, James C. Y.

Risk-Cost Approach to Interim Drainage Structure Design, 1317

Surface-Subsurface Model for Trench Infiltration Basins, 1311

Gupta, Abhinav

Missing Mass Effect in Coupled Analysis. I: Complex Modal Properties, 1079

Missing Mass Effect in Coupled Analysis. II: Residual Response, 1080

Gupta, Ajaya K.

see Gupta, Abhinav, 1079

see Gupta, Abhinav, 1080

Gupta, K. N. Vijayagopala

see Shafahi, Yousef, 1250

Gupta, Rakesh

see Li, Zhong, 1397

Gupta, Sunil K.

see Atkinson, Joseph F., 419

Gupta, Vinay K.

see Basu, Biswajit, 345

see Shrikhande, Manish, 349

Guralnick, Sidney A.

see Mohammadi, Jamshid, 1399

Gurley, Kurtis R.

Simulation of Ringing in Offshore Systems under Viscous Loads, 280

Gusella, V.

see Galano, L., 1121

Gusella, Vittorio

Safety Estimation Method for Structures with Cumulative Damage, 351

Gustafson, Michael A.

see Hajjar, Jerome F., 1120

see Leon, Roberto T., 1119

Gutierrez, Neyda

see Shafique, Md. Sazzad Bin, 426

Guymer, I.

Longitudinal Dispersion in Sinuous Channel with Changes in Shape, 644

Guza, R. T.

see Raubenheimer, B., 1341

Guzmán, Javier Rojas

see de Neufville, Richard, 1246

Gylltoft, Kent

see Claeson, Christina, 1051

see Plos, Mario, 79

Gyürek, Lyndon L.

Modeling Water Treatment Chemical Disinfection Kinetics, 469

Haas, Carl T.

see Burleson, Rebecca C., 196

see Kim, Young-Suk, 1212

see LeBlond, David, 174

AUTHOR INDEX

Hansen

Haberlandt, Uwe

Stochastic Rainfall Synthesis Using Regionalized Model Parameters, 810

Hadavi, Ahmad

see Lo, Wei, 925

Hadi, Muhammad NS

Optimum Design of Absorber for MDOF Structures, 1161

Hafeez, Bader

see Thomas, Natacha E., 1238

Hagen, Brad L.

see Barkdoll, Brian D., 654

Hager, Willi H.

Generalized Culvert Design Diagram, 887

see Fritz, Hermann M., 758

see Reinauer, Roger, 647

Haghani, Ali

see Shafahi, Yousef, 1250

Haghighat, Fairborz

see Banu, Dorina, 963

Haidar, Saleh

see Biggar, Kevin W., 85

Haimes, Yacov Y.

Reducing Vulnerability of Water Supply Systems to Attack, 847

Risk-Based Decision Making in Water Resources VIII, 1591

see Olsen, J. Rolf, 1306

Haith, Douglas A.

Materials Balance for Municipal Solid-Waste Management, 383

Hajjar, Dany

Modeling and Analysis of Aggregate Production Operations, 186

Hajjar, Jerome F.

Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1014

Seismic Response of Composite Moment-Resisting Connections. II: Behavior, 1120

see Leon, Roberto T., 1119

see O'Sullivan, David P., 1013

Haktanir, Tefaruk

see Seckin, Galip, 710

Halder, A.

see Chowdhury, M. R., 1033

Halkali, Hasan

see Everett, John G., 164

Hall, J. E.

Combined FRP Reinforcement and Permanent Formwork for Concrete Members, 122

Hall, John F.

see Gan, Wenshui, 215

Hall, Robert

see Chowdhury, Mostafiz, 121

Hall, Robert L.

see de Béjar, Luis A., 743

Halpin, Daniel W.

see Senior, Bolivar A., 148

Halverson, Marty

see Parker, Gary, 762

Ham, Robert K.

see Baldwin, Timothy D., 518

Hambertsumian, Vladimer

see Masih, Rusk, 1006

Hamburger, Ronald O.

see Mahin, Stephen A., 1008

Hamed, Mohammad M.

Integrated Modeling of Urban Shopping Activities, 1278

Ordered Probability Modeling of Seat Belt Usage, 1232

Hamilton, H. R., III

Bridge Stay Cable Corrosion Protection. I: Grout Injection and Load Testing, 64

Bridge Stay Cable Corrosion Protection. II: Accelerated Corrosion Tests, 65

Hammons, Michael I.

see Rollings, Raymond S., 989

Hamrick, J. M.

see Tisdale, T. S., 689

Hamzeh, Osama

Model for Viscous "Walking" of Elastomeric Bridge Bearings, 236

Hamzeh, Osama N.

Behavior of Elastomeric Bridge Bearings: Computational Results, 73

Han, Charles S.

Client/Server Framework for On-Line Building Code Checking, 106

Han, J.-B.

see Liew, K. M., 205

Han, Sang Hun

see Kim, Jin Keun, 982

Han, Wei

see Reddi, Lakshmi N., 515

Hancher, Donn E.

see de la Garza, Jesus M., 177

see Saad, Ihab Mohammad Hamdi, 149

Hancock, G. J.

see Wheeler, A. T., 1043

Hancock, Gregory J.

see Rogers, Colin A., 1112

see Wilkinson, Tim, 1150

Hands, Edward B.

see Ahrens, John P., 1323

Hankins, Deborah A.

see Warner, Scott D., 435

Hansen, Jens A.

see Poulsen, Tjalfé G., 391

Hansen, Jens Aa.

see Poulsen, Tjalfé G., 492

Hansen

Hansen, Mark

see Work, Paul A., 1186

Hansen, William J.

Cost Effectiveness and Incremental Cost Analyses:
Alternative to Benefit-Cost Analysis for Environ-
mental Remediation Projects, 1362

Hanson, B. R.

Error Analysis of Flow Meter Measurements, 883

Hanson, Mark T.

Elastic Subsurface Stress Analysis for Circular Foun-
dations. I, 274

Elastic Subsurface Stress Analysis for Circular Foun-
dations. II, 275

Hantush, Mohamed M.

Interlayer Diffusive Transfer and Transport of Contam-
inants in Stratified Formation. I: Theory, 820

Interlayer Diffusive Transfer and Transport of Contam-
inants in Stratified Formation. II: Analytical Solu-
tions, 821

Hao, Hong

Analytical Modeling of Traffic-Induced Ground Vibra-
tions, 319

Haque, A.

Modeling Density and Turbulence in Stratified Tidal
Medium, 662

Harb, J. N.

see Yegian, M. K., 621

Harder, Leslie F., Jr.

see Boulanger, Ross W., 524

Hardy, Claude

see Goudreau, Sylvain, 306

Harik, Issam E.

see Robson, Bradley N., P.E., 1126

Harkness, Edward L.

see Hassanain, Mohammad A., 42

Harmelink, David J.

Linear Scheduling Model: Development of Controlling
Activity Path, 171

Harmon, Thomas C.

see Duke, L. Donald, P.E., 423

Harmon, Thomas G.

Confined Concrete Subjected to Uniaxial Monotonic
Loading, 363

Harper, B.

Influence of Water Content on SVE in a Silt Loam
Soil, 500

Harper, Daniel

see Mayo, Lynn M., P.E., 1490

Harper, Randall S.

Managing Industrial Construction Safety in Southeast
Texas, 192

Harris, Harry G.

New Ductile Hybrid FRP Reinforced Bar for Concrete
Structures, 117

Harris, Robert B.

Scheduling Projects with Repeating Activities, 172

1998 ASCE TRANSACTIONS

Hartley, James, P.E.

see Kraemer, Thomas A., P.E., 1382

Hartlund, J. L.

see Kim, B. R., 507

Hasen, Michael, P.E.

see Kayyal, Mohamad K., P.E., 626

Hasham, Anthony S.

Capacity of Thin-Walled I-Section Beam-Columns,
1063

Hashash, Youssef, ed.

see Finno, Richard J., ed., 1558

Hashmi, Mansoor A.

Spatial and Temporal Errors in Estimating Regional
Evapotranspiration, 865

Hassan, Moataz

see Iskander, Maged G., P.E., 127

Hassan, Sherif K.

Axial Fatigue Performance of Cold-Formed Steel Sec-
tions, 1041

Hassan, Y.

Design Considerations of Sight Distance Red Zones on
Crest Curves, 1240

Design of Sag Vertical Curves in Three-Dimensional
Alignments, 1200

see Easa, S. M., 1247

Hassanain, Mohammad A.

Priorities in Building Envelope Design, 42

Hassanein, Alaa M.

see Buenfeld, Nick R., 979

Hatfield, Kirk

see Annable, Michael D., 431

Hatfield, William S.

see McGahren, John, P.E., 1520

Hathoot, Helmi M.

Theory of Pipe Drainage Assisted by Mole Drainage,
864

Haug, M. D.

Impact of Confining Pressure on Long-Term Perform-
ance of Chemical Grout in Salt Water, 960

Hauptmann, Janusz

see Sawicki, Andrzej, 1347

Hawes, Douglas

see Banu, Dorina, 963

Hawkins, Edward F.

see Bucknam, Mark D., P.E., 1522

Hawwa, Muhammad A.

Vibration Isolation of Machine Foundations by Period-
ic Trenches, 259

Hay, K. James

see Qi, Shaoying, 510

Hayden, William M., Jr.

see Flack, David A., 897

Hayes, Donald F., ed.

Engineering Approaches to Ecosystem Restoration,
1562

AUTHOR INDEX

Hodge

- He, Lin**
see Collins, Anthony G., 452
- Hearing, Brian**
see Buyukozturk, Oral, 131
- Hearn, George**
 Integration of Bridge Management Systems and Non-destructive Evaluations, 832
- Heckert, N. A.**
 Estimates of Hurricane Wind Speeds by 'Peaks Over Threshold' Method, 1073
- Hegazy, Tarek**
 Neural Network Model for Parametric Cost Estimation of Highway Projects, 165
- Heiberg, E. R., III, P.E.**
 A Corps Chief Looks at "Rising Tide", 1418
- Heidengren, Charles R., P.E.**
 Burrowing Beneath Bangkok, 1481
- Heijnen, J. J.**
see van Benthum, W. A. J., 402
- Heilers, G. A.**
see Kjartanson, B. H., 537
- Heiser, J.**
see Sullivan, T. M., 430
- Heister, H.**
see Merry, C. L., 1191
- Hekimoğlu, Şerif**
 Application of Equiredundancy Design to M-Estimation, 1188
- Hekmat, Parviz**
see Grenney, William J., 876
- Helmer, Ray G., P.E.**
 Time Management for Engineers and Constructors, 1600
- Helwany, Sam**
 Finite-Element Analyses of Flexible Pavements, 1258
- Helweg, Otto J.**
see Sisodia, Sunita, 871
see VonHofe, Fred, 783
- Hemond, Harold F.**
see Kim, Heekyung, 464
- Hemsley, J. Michael, ed.**
see Edge, Billy L., ed., 1583
- Hendrickson, Chris**
see Horvath, Arpad, 840
- Hendrickson, Chris T., ed.**
 Applications of Advanced Technologies in Transportation, 1545
- Hendrickson, Mark L.**
see Russell, Jeffrey S., P.E., 940
see Russell, Jeffrey S., P.E., 1402
- Henk, Gregory**
 Privatization and the Public/Private Partnership, 928
- Henriksen, Sten K.**
see Velivasakis, Emmanuel E., 998
- Hensey, Mel, P.E.**
 Maximizing CEO Performance, 927
- Herbsman, Zohar J.**
 Lane Rental—Innovative Way to Reduce Road Construction Time, 188
- Herman, Lloyd A.**
 Analysis of Proponent Mitigated Development Plans for Traffic Noise, 1245
- Herman, Robert**
see Liu, Chiu, 1207
- Hermann, Douglas J., P.E.**
see Twardock, Robert K., P.E., 1502
- Heroux, Jason P., P.E.**
 Scaffolding—What Can We Do? (Available only in Structural Engineering Special Issue), 1447
- Herrmann, Michael N.**
see Kobayashi, Nobuhisa, 1335
- Herrmann, T.**
 Two-Step Identification Approach for Damped Finite Element Models, 287
- Hetherington, J. G.**
see Mays, G. C., 1089
- Heyliger, Paul**
see Hussein, Manar, 362
- Hibbs, David E.**
 Sulfur Hexafluoride Gas Tracer Studies in Streams, 465
- Hidalgo, C.**
see Martín-Vide, J. P., 698
- Highway Innovative Technology Center**
 Evaluation of the Tensar ARES™ Retaining Wall System, 1565
- Hill, Howard J.**
 Proportioning: Missing Step in Model Building Code Seismic Design, 1388
- Hilton, Amy B. Chan**
 Residence Time of Freshwater in Boston's Inner Harbor, 1333
- Hines, Eric M.**
 Case Study of Bridge Design Competition, 67
- Hinze, Jimmie**
 Identifying Root Causes of Construction Injuries, 147
see Uhlik, Felix T., 53
- Hjelmfelt, Allen T.**
see Wang, Menghua, 791
- Hjelmstad, K. D.**
 Framework for Modeling Durability Cost of Structural Systems, 842
see Zuo, Q. H., 254
- Ho, Carlton L., ed.**
see Finno, Richard J., ed., 1558
- Ho, Clifford K.**
 Analytical Inverse Model for Multicomponent Soil Vapor Extraction, 432
- Hodge, Vernon Earl, P.E.**
 Sludge's Re-Treat, 1524

Hoffman

Hoffman, Adam H., P.E.
Pump-and-Treat Rescue, 1432

Hoffman, Pete
see Chowdhury, Mostafiz, 121

Hoffmans, Gijs J. C. M.
Jet Scour in Equilibrium Phase, 697

Hogan, Scott A.
see Watson, Chester C., 648

Hogue, A. M.
see Ahmed, I., 1005

Holcomb, Stephen P., P.E.
see Dahl, Bernard, 1421

Holguin, Richard E.
Building Department's Response to EQ Damage to Steel Frame Buildings, 1011

Holland, John
see Mau, S. T., 1053

Holt, J. Darrin, P.E.
see Slaughter, Scott H., P.E., 1518

Holtschlag, D. J.
Estimating Ice-Affected Streamflow by Extended Kalman Filtering, 812

Holzappel, E. A.
see Carvalho, H. O., 859

Hong, L.
see Mau, S. T., 1053

Hong, Namhee Kim
Entity-Based Models for Computer-Aided Design Systems, 94

Hong, Sunggul
see Hong, Namhee Kim, 94

Hopperstad, O. S.
see Moen, L. A., 1103

Horsch, Georgios M.
Steady, Diffusive-Reactive Transport in Shallow Triangular Domain, 344

Horton, Peter R.
see Lee, Joseph H. W., 693

Horvath, Arpad
Steel Versus Steel-Reinforced Concrete Bridges: Environmental Assessment, 840

Hoshikuma, Jyun-ichi
see Kawashima, Kazuhiko, 1083

Hoshiya, Masaru
Estimation of Conditional Non-Gaussian Translation Stochastic Fields, 261
Process Noise and Optimum Observation in Conditional Stochastic Fields, 366
see Noda, Shigeru, 348

Hossain, K. M. Anwar
Performance of Profiled Concrete Shear Panels, 1065
see Famiyesin, Olubayo O. R., 1087
see Famiyesin, Olubayo O. R., 1168

Hotha, Bhaumik V.
see Davis, Allen P., 503

1998 ASCE TRANSACTIONS

Hou, Aili
see Plaut, Raymond H., 299

Howard, Samuel M.
Analysis and Experiments on Stress Waves in Planar Trusses, 315

Howell, G.
see Ballard, G., 140

Hryciw, Roman D.
see Abdel-Haq, Ali, 531

Hsiao, Chih-Chien
see Chou, Ming-Shean, 476

Hsieh, C. C.
see Kareem, Ahsan, 290

Hsieh, Ting-Ya
Impact of Subcontracting on Site Productivity: Lessons Learned in Taiwan, 150

Hsu, Cheng-Tzu Thomas
see Wang, Gary Gang, 305

Hsu, Chung-Chieh
Flow at a 90° Equal-Width Open-Channel Junction, 668
Subcritical Open-Channel Junction Flow, 747

Hsu, Tai-Wen
Calibration of Businger-Arya Type of Eddy Viscosity Model's Parameters, 1355

Hsu, Thomas T. C.
Stresses and Crack Angles in Concrete Membrane Elements, 1179
see Zhang, Li-Xin "Bob", 1027

Hsuan, Grace Y.
see Koerner, George R., 633

Hsuan, Y. G.
Antioxidant Depletion Lifetime in High Density Polyethylene Geomembranes, 576

Hsueh, Che-Fu
see Chen, Huey-Kuo, 1228

Hu, H.-L.
Inhibition of Nickel Precipitation by Gluconate. I: Kinetic Studies and Spectroscopic Analyses, 455
Inhibition of Nickel Precipitation by Gluconate. II: Kinetic Modeling, 456

Hu, Jin
Threshold Between Smooth and Wavy Laminar Sheet Flow, 253

Hu, W. C.
Proof of Tienstra's Formula for an External Observation Point, 1184

Huang, Bingzhao
Design of Small, Hard-Shell Overflow Dams on Compressible Foundations, 200

Huang, Chiajim
Model of Leaching Behavior from Fly Ash Landfills with Different Age Refuses, 467

Huang, Chihpin
see Chung, Ying-Chien, 415

AUTHOR INDEX

Ioannides

Huang, Ching-Jer

Numerical Simulation of Nonlinear Viscous Wavefields Generated by Piston-Type Wavemaker, 341

Huang, Chiung-Shiann

In-Plane Transient Responses of Arch with Variable Curvature Using Dynamic Stiffness Method, 308

Huang, Dade

Damage Progression in Carbon-Fiber Reinforced Plastic I-Beams, 118

Huang, H. P.

see Ettema, R., 88

Huang, Hening

Initial Dilution Equations for Buoyancy-Dominated Jets in Current, 658

Huang, J. T.

Properties of Artificially Cemented Carbonate Sand, 572

Huang, Tien-Kuen

see Lin, Pin-Sien, 1210

Hueckel, Tomasz

see Kaczmarek, Mariusz, 235

Huerta, Antonio

see Rodríguez-Ferran, Antonio, 321

Hughes, David E.

see Knox, Robert C., P.E., 1022

Hughes, Roger L.

see Western, Andrew W., 680

Hugo, Fred

see Chen, Dar-Hao, 1257

Hugo, Frederick

see Kim, Seong-Min, 1209

Hullman, Aaron, P.E.

see Mountain, Stewart, P.E., 1523

Hunt, Bruce

Contaminant Source Solutions with Scale-Dependent Dispersivities, 824

Hunt, Carlton D.

see Curran, Mark D., 1427

Hunt, Melody J.

Determining Anaerobic BTEX Decay Rates in Contaminated Aquifer, 826

Huntley, David A.

Estimating the Directional Spectrum of Waves Near a Reflector, 1359

Hurley, Jamie W.

Utilization of Double Left-Turn Lanes with Downstream Land Reductions, 1226

Hurtig, E.

see Schreck, M., 451

Hushmand, B.

see Morochnik, V., 543

Hussein, Manar

Three-Dimensional Vibrations of Layered Piezoelectric Cylinders, 362

Huston, D. R.

see Kotheke, A. V., 993

Hutchens, E.

see Saïdi, M., 69

Hutchinson, Bruce G.

see Ghali, Reza, 1218

Hutchinson, Paul A.

Solute Uptake in Aquatic Sediments Due to Current-Obstacle Interactions, 421

Hwang, Howard H. M.

Seismic Performance Assessment of Water Delivery Systems, 841

Hwang, Richard, ed.

see Lambrechts, James R., ed., 1548

Hymphrey, D. N., P.E.

see Tweedie, J. J., 624

Hynes, C.

see Deschamps, R., 569

Iannuzzi, Richard A.

see van de Kreeke, Jacobus, 789

Ibáñez, R.

Fly Ash Binders in the Stabilization of FGD Wastes, 380

Ibbs, C. William

see Chang, Andrew Shing-Tao, 930

Iji, Masatoshi

Pyrolysis-Based Material Recovery from Molding Resin for Electronic Parts, 473

Ikuta, Yuji

see Iji, Masatoshi, 473

Illich, Nesa

Evolutionary Algorithm for Minimization of Pumping Cost, 111

Imam, Mahmood Omar

Optimal Design of Public Bus Service with Demand Equilibrium, 1251

Imbabi, M. S.

see Reid, M. D., 1236

Imbimbo, Maura

Influence of Material Stiffening on Stability of Elastomeric Bearings at Large Displacements, 333

Inada, Hiroshi

see Hoshiya, Masaru, 261

Indraratna, B.

Laboratory Determination of Smear Zone due to Vertical Drain Installation, 542

Shear Behavior of Railway Ballast Based on Large-Scale Triaxial Tests, 567

Indrasenan, N.

see Kumar, C. Nagaraju, 867

Ingruber, M. M.

see Tschegg, E. K., 1255

Ioannides, Anastasios M.

General Formulation for Multilayered Pavement Systems, 1204

Ioannides

Nonlinear Temperature Effects on Multilayered Concrete Pavements, 1211

Ioannou, Photios G.

see Harris, Robert B., 172

Ionescu, D.

see Indraratna, B., 567

Iori, Ivo

see Fantilli, Alessandro P., 1139

Irabien, J. A.

see Ibáñez, R., 380

Irish, Lyn B., Jr.

Use of Regression Models for Analyzing Highway Stormwater Loads, 493

see Barrett, Michael E., 389

Irish, Lyn B., Jr., P.E.

see Hodge, Vernon Earl, P.E., 1524

Irvine, Robert L.

see White, Daniel M., 80

Isaacs, Beatrice

Notice Ratings as a Management Tool to Reduce Truck Rollovers on Ramps, 846

Isaacson, Michael

Earthquake-Induced Sloshing in Vertical Container of Arbitrary Section, 225

Wave Interactions with Vertical Slotted Barrier, 1337

Ishai, Ilan

see Divinsky, Michael, 1268

Iskander, Magued G., P.E.

State of Restored Practice Review in FRP Composite Piling, 127

Islam, M. A.

Initial Settling Rate/Concentration Relationship in Zone Settling, 379

Islam, M. Rashidul

Modeling of Constituent Transport in Unsteady Flows in Pipe Networks, 776

Ismail, Nabil F.

Leaching Effects on the Properties of Cemented Sands in Kuwait, 618

Isshiki, Y.

see Ohsaki, M., 1166

Itani, Rafik Y.

see Kamiya, Fumio, 1116

Ivan, John N.

see Zhao, Jun, 838

Iwashita, Kazuyoshi

Rolling Resistance at Contacts in Simulation of Shear Band Development by DEM, 243

Iyengar, Hal

Framing a Work of Art, 1429

Iyengar, Leela

see Philip, Ligy, 514

Jabbari, F.

see Nguyen, T., 312

1998 ASCE TRANSACTIONS

Jacangelo, Joseph G.

The Membrane Treatment, 1494

see Chellam, Shankararaman, 520

Jackson, Bronwyn A.

see Haimes, Yacov Y., 847

Jacob, Richard P.

see Davis, Alastair C., 738

Jacobs, Jennifer M.

Optimal Allocation of Water Withdrawals in River Basin, 1320

Jacobs, Laurence J.

see Littles, Jerrol W., 129

Jain, Sharad K.

Reservoir Operation Studies of Sabarmati System, India, 1285

James, Ken

see Zhao, Yu, 346

James, P.

see Chanson, H., 999

James, R. Thomas

see Jin, Kang-Ren, 1284

Jamiolkowski, M.

see Salgado, R., 607

Jan, Chyan-Deng

Bed Forms Generated on Sandy Bottom by Oblique Standing Waves, 1357

see Hsu, Tai-Wen, 1355

Jang, Tae Youn

see Wegmann, Frederick J., 1231

Jangid, R. S.

Effectiveness of Elliptical Rolling Rods for Base Isolation, 1077

Janoo, Vincent C.

PCC Airfield Pavement Response During Thaw-Weakening Periods, 87

Jansen, David, P.E.

Speak Out: The Engineer as Communicator, 908

Janson, Bruce N.

Modified Delay Equations for Permitted Left Turns, 1241

Jardim, José, P.E.

see Gessner, George A., 1505

Jardine, R. J.

Axial Capacity of Offshore Piles in Dense North Sea Sands, 541

see Chow, F. C., 549

Jared, David

see Bischoff, Deb, 1525

Jarrett, Peter M.

see Biggar, Kevin W., 85

Jaselskis, Edward J.

Bidding Considerations in Developing Countries, 162

see Russell, Jeffrey S., P.E., 940

see Russell, Jeffrey S., P.E., 1402

AUTHOR INDEX

Jung

Jasiuk, I.

see Al-Ostaz, A., 244

Jaw, S. Y.

Present Status of Second Order Closure Turbulence Models. II: Applications, 270

Present Status of Second-Order Closure Turbulence Models. I: Overview, 269

Jayawardena, A. W.

see Fernando, D. Achela, 815

Jefferson, Anthony D.

Plastic-Damage Model for Interfaces in Cementitious Materials, 302

Jepsen, Rich

see Roberts, Jesse, 790

Jepson, William

Sim City of Angels, 1460

Jeremic, Boris

see Sture, Stein, 25

Ji, Zhong

General Hydrodynamic Model for Sewer/Channel Network Systems, 683

Jiang, Hongping

see Cheng, Franklin Y., 23

Jiang, Lei

see Chui, Ying H., 1035

Jiang, Wei

Theoretical and Experimental Investigation of Helical Cardiac Leads, 214

Jiao, Haiying

see Shemer, L., 1360

Jiao, J. J.

see Zheng, C., 433

Jiménez, B. E.

Water Availability in Mexico Considering Quantity, Quality, and Uses, 1281

Jin, Haisheng

see Chau, K. W., 449

Jin, Kang-Ren

Assessing Lake Okeechobee Eutrophication Water-Quality Models, 1284

Jin, Shi

see Aral, Mustafa M., 777

Jin, Xin

see Cheu, Ruey-Long, 1262

Jin, Yan

see Yuan, Si, 368

Jin, Yee-Chung

see Zheng, Y., 652

Jirásek, Milan

Analysis of Rotating Crack Model, 310

Rotating Crack Model with Transition to Scalar Damage, 242

Jirka, Gerhard H.

see Moog, Douglas B., 386

Johansson, Håkan

see Wörman, Anders, 388

Johnsen, Larry, ed.

Grouts and Grouting: A Potpourri of Projects, 1571

Johnson, Bradley D.

see Kobayashi, Nobuhisa, 1335

Johnson, Edward R.

see Anagnostou, Emmanouil N., 809

Johnson, Holly M.

Conflict Management Diagnosis at Project Management Organizations, 937

Fall Protection Analysis for Workers on Residential Roofs, 189

Personality of Civil Engineers, 931

Johnson, James W., P.E.

Lessons from an Outpatient Surgery Center, 46

Johnson, Peggy A.

Probabilistic Bridge Scour Estimates, 736

Johnson, Ron

see Ouyang, Leslie, 1452

Johnson, Stewart W.

see Chua, Koon Meng, 35

Johnson, T. L.

see Abt, Steven R., 727

Johnston, Roy G.

see Anderson, James C., 1010

Johnstone, Donald L.

see Schmieman, Eric A., 424

Joint Task Force of the Water Environment Federation and the American Society of Civil Engineers

Design of Municipal Wastewater Treatment Plants, 1560

Joint Task Force of the Water Environment Federation and the American Society of Civil Engineers

Urban Runoff Quality Management, 1604

Jonasson, Tim

Microtunneling: An Owner's Perspective, 1391

Jones, B. H.

see Petrenko, A. A., 713

Jones, J.

Performance Comparison for Thermal Comfort Sensors, 49

Jones, J. Sterling

see Umbrell, Edward R., 676

Jorgensen, Stan J.

see Rollins, Kyle M., 589

Jou, Lee-Der

see Tsai, Jiin-Song, 627

Juang, C. H.

see Lin, Pin-Sien, 1210

Julien, P. Y.

Upper-Regime Plane Bed, 773

Jung, Beom Seok

see Oh, Byung Hwan, 1129

Kabir, Mohammad Z.

Lateral-Torsional Buckling of Post-Local Buckled Fibrous Composite Beams, 300

Kacerek, T. F.

see Clemmens, A. J., 853

Kaczmarek, Mariusz

Use of Porosity in Models of Consolidation, 235

Kadakal, U.

see Yegian, M. K., 621

Kadavy, K. C.

see Rice, C. E., 667

Kaihatu, James M.

Two Dimensional Parabolic Modeling of Extended Boussinesq Equations, 1330

Kajon, G.

see Castellani, A., 284

Kalaycioglu, S.

Vibration Control of Flexible Manipulators Using Smart Structures, 28

Kale, Serdar

Business Failures: Liabilities of Newness, Adolescence, and Smallness, 193

Kalis, E. M.

see Kim, B. R., 507

Kambham, Kiran K. R.

see Tuncay, Kagan, 286

Kameshki, E. S.

Comparison of BS 5950 and AISC-LRFD Codes of Practice, 1396

Kamiya, Fumio

Design of Wood Diaphragm with Openings, 1116

Kanamori, Hiroshi

see Matsumoto, Shinji, 34

Kanaroglou, P. S.

see Boyle, S.J., 1291

Kanda, Tetsushi

Interface Property and Apparent Strength of High-Strength Hydrophilic Fiber in Cement Matrix, 951

Kang, C. T.

Strength of DT Tubular Joints with Brace and Chord Compression, 1109

Kang, Leen S.

Information Management to Integrate Cost and Schedule for Civil Engineering Projects, 185

Kang, Yumin Vincent

Multifrequency Back-Calculation of Pavement-Layer Moduli, 1203

Kaniraj, Shenbaga R.

Interpretation of Pile Acceptance Criteria from Deficient Data, 622

Kanzaki, Kouichi

see Suzuki, Yasushi, 1067

Kapoor, Anoop

Use of Immobilized Bentonite in Removal of Heavy Metals from Wastewater, 498

Kar, S. K.

see Chatterjee, C., 863

Karambas, Theofanis V.

An Improvement to Stokes Nonlinear Theory for Steady Waves, 1326

Karamisheva, R. D.

see Islam, M. A., 379

Karandikar, Jaydeep

see Lee, Joseph H. W., 693

Karasaki, Kenzi

see Vasco, D. W., 526

Kareem, Ahsan

Frequency-Domain Analysis of Offshore Platform in Non-Gaussian Seas, 290

see Gurley, Kurtis R., 280

Karim, Fazle

Bed Material Discharge Prediction for Nonuniform Bed Sediments, 717

Karney, Bryan W.

see Adams, Barry J., 1319

see Axworthy, David H., 682

see Ghidaoui, Mohamed S., 692

Kartam, Nabil, ed.

see Flood, Ian, ed., 1546

Kasai, Kazuhiko

Two Types of Passive Control Systems for Seismic Damage Mitigation, 1081

see Fu, Yaomin, 1082

Kasch, M.

see Schreck, M., 451

Kashyap, D.

see Sulekha, 870

Kassem, Ahmed A.

Comparison of Coupled and Semicoupled Numerical Models for Alluvial Channels, 741

Katafygiotis, L. S.

Updating Models and Their Uncertainties. Part II: Model Identifiability, 264

see Beck, J. L., 263

Kathuria, Ajay

see Lafebre, Hilda, 1376

Katopodes, Nikolaos D.

Short-Wave Behavior of Long-Wave Equations, 1350

see Bradford, Scott F., 877

see Sanders, Brett F., 641

see Yost, Scott A., 869

Katsamaki, Anastasia

Time Series Analysis of Municipal Solid Waste Generation Rates, 395

Katz, Amnon

Effect of Helical Wrapping on Fatigue Resistance of GFRP, 128

Kaufmann, Walter

Structural Concrete: Cracked Membrane Model, 1178

AUTHOR INDEX

Kim

Kausel, Eduardo

Blast Loads Versus Point Loads: The Missing Factor, 237

New Seismic Testing Method. I: Fundamental Concepts, 277

New Seismic Testing Method. II: Proof for MDOF Systems, 278

Kavazanjian, Edward, Jr.

see Matasović, Neven, 544

Kavvas, M. Levent

see Dogrul, Emin C., 823

Kawabata, Toshinori

see Ling, Hoe I., 525

see Ling, Hoe I., 597

Kawashima, Kazuhiko

Residual Displacement Response Spectrum and Its Application, 1083

Kawazoe, Keizi

Beam-Type Dynamic Vibration Absorber Comprised of Free-Free Beam, 267

Kayyal, Mohamad K., P.E.

Case Study of Slope Failures at Spilmans Island, 626

Keady, Grand

Colebrook-White Formula for Pipe Flows, 655

Kee, S. T.

see Cho, I. H., 1324

Kelly, Dennis L.

see Everett, John G., 181

Kelly, James M.

see Imbinbo, Maura, 333

see Makris, Nicos, 353

Kelly, William R.

see Thomas, Stephen R., 146

Kelsey, J. A.

see Stormont, J. C., 437

Kemp, Alan R.

Behavior of Cross-Bracing in Latticed Towers, 1064

Kennedy, D. J. Laurie

see Driver, Robert G., 1037

see Driver, Robert G., 1038

Kennedy, John B.

see Sennah, Khaled, 62

Kenney, Michael D.

see Kuprenas, John A., 1389

Kesserwan, Abbas

see Mabsout, Mounir E., 68

Kessler, Avner

Detecting Accidental Contaminations in Municipal Water Networks, 1301

Ketner, Russ, P.E.

see Knox, Robert C., P.E., 1022

Khalifa, Ahmed

Contribution of Externally Bonded FRP to Shear Capacity of RC Flexural Members, 138

Khalsa, R. D.

see Burt, C. M., 857

Khan, M. S.

see Al-Gahtani, H. J., 361

Khandelwal, Ashutosh

see Rabideau, Alan, 411

see Rabideau, Alan, 511

Khatiwada, N. R.

see Polprasert, C., 475

Khazanovich, Lev

see Ioannides, Anastasios M., 1204

see Ioannides, Anastasios M., 1211

Khazem, Dyab

All Decked Out, 1466

Kheireldin, Khaled

see Molinas, Albert, 744

Khire, M. V.

see Meerdink, J. S., 6

Khor, E. L.

see Ng, W. M., 100

Khot, N. S.

Multicriteria Optimization for Design of Structures with Active Control, 22

Khuntia, Madhusudan

FRC-Encased Steel Joist Composite Beams Under Reversed Cyclic Loading, 1145

Kiefa, M. A. Abu

General Regression Neural Networks for Driven Piles in Cohesionless Soils, 635

Kikuchi, Shinya

Treatment of Uncertainty in Study of Transportation: Fuzzy Set Theory and Evidence Theory, 1194

Kilambi, Srinivas

see Collins, Anthony G., 452

Kiliccote, Han

Standards Modeling Language, 102

Kim, B. R.

Photochemical Destruction of Cyanide in Landfill Leachate, 507

Kim, Daejoong

Prediction of Reinforcement Tension Produced by Arch Action in RC Beams, 1092

Kim, Heekyung

Natural Discharge of Volatile Organic Compounds from Contaminated Aquifer to Surface Waters, 464

Kim, J. M.

see Yu, H. S., 523

Kim, Jang Jay H.

see Bažant, Zdeněk P., 364

see Bažant, Zdeněk P., 365

Kim, Jin Keun

Material Properties of Self-Flowing Concrete, 982

Kim, K. W.

see El Hussein, H. M., 986

Kim

- Kim, M. H.**
see Cho, I. H., 1324
- Kim, Man-Cheol**
see Lee, In-Won, 279
- Kim, Myung Hak**
 Side Shear Induced in Drilled Shaft by Suction Change, 596
- Kim, Nak-Kyung**
see Briaud, Jean-Louis, 530
- Kim, Seong-Min**
 Moving Loads on a Plate on Elastic Foundation, 329
 Small-Scale Accelerated Pavement Testing, 1209
- Kim, Woo**
see Kim, Daejoong, 1092
- Kim, Y.**
see Jones, J., 49
- Kim, Y. Richard**
see Lee, Hyun-Jong, 208
see Lee, Hyun-Jong, 354
see Park, Sun Woo, 233
- Kim, Yosuk**
 Practical Analysis for Partially Restrained Frame Design, 1105
- Kim, Young-Suk**
 Path Planning for a Machine Vision Assisted, Teleoperated Pavement Crack Sealer, 1212
- Kindzierski, W. B. "Warren"**
 Assessing Human Exposure to Benzene at Petroleum-Contaminated Site, 1375
- King, Kim W.**
see Norville, H. Scott, 210
- Kiral, E.**
see Yerli, H. R., 616
- Kirby, James T.**
see Chawla, Arun, 1345
see Kaihatu, James M., 1330
- Kiremidjian, Anne S.**
see Singhal, Ajay, 1125
- Kissinger, John H., P.E.**
 Express Design, 1483
- Kit, E.**
see Shemer, L., 1360
- Kit, Eliezer**
 Dynamical Models for Cross-Shore Transport and Equilibrium Bottom Profiles, 1339
- Kitada, Yoshihiro**
 Identification of Nonlinear Structural Dynamic Systems Using Wavelets, 335
- Kitipornchai, S.**
see Liew, K. M., 222
- Kiureghian, Armen Der**
see Geyskens, Philippe, 1034
- Kjartanson, B. H.**
 Role of Geophysics in Expedited Site Characterization: Case History, 1365

1998 ASCE TRANSACTIONS

- Soil-Structure Interaction Analysis of the Longitudinal Uplift of Culverts, 537
- Klaiber, F. W.**
see Kjartanson, B. H., 537
- Klancnik, Fred, P.E.**
see Arbogast, Dennis, 1508
- Klisinski, Marek**
 On Stability of Multitime Step Integration Procedures, 303
- Knight, Donald W.**
see Cao, Shuyou, 702
- Knox, Robert C., P.E.**
 Teaching Engineering Design with Practitioner Supervision: A Case Study, 1022
- Knox, Ronald, P.E.**
see Zimmerman, Kathryn A., P.E., 836
- Ko, Frank K.**
see Harris, Harry G., 117
- Kobayashi, Nobuhisa**
 Probability Distribution of Surface Elevation in Surf and Swash Zones, 1335
see Melby, Jeffrey A., 1356
- Kocabaş, Fikret**
see Yıldırım, Nevzat, 657
- Kodur, V.K.R.**
 Design Equations for Evaluating Fire Resistance of SFRC-Filled HSS Columns, 1098
- Koehn, Enno**
see Harper, Randall S., 192
- Koelle, Hermann H.**
 Role of Launch Vehicles in Moon-Mars Exploration Program, 32
- Koerner, George R.**
 Photo-Initiated Degradation of Geotextiles, 633
- Koerner, R. M.**
see Hsuan, Y. G., 576
- Koerner, Robert M.**
see Daniel, David E., 584
see Koerner, George R., 633
- Koev, Kalin**
see Sanchez, Luis, 699
- Kohutek, Terry L.**
see Beason, W. Lynn, 1049
- Kolsch, Holger**
 Carbon Fiber Cement Matrix (CFCM) Overlay System for Masonry Strengthening, 125
- Komarukulnanakorn, C.**
see Wu, Han C., 230
- Kominek, Milan**
 Czech It Out (Available only in Structural Engineering Special Issue), 1449
- Konchar, Mark**
 Comparison of U.S. Project Delivery Systems, 190
- Kong, Sia-Keong**
see Chuang, Poon-Hwei, 1133

AUTHOR INDEX

Kumar

- Kono, Iwao
see Kawazoe, Keizi, 267
- Kopalani, Z. D.
see Shvidchenko, A. B., 739
- Koppens, N. C.
see Campbell, T. I., 77
- Koran, Joseph M.
see Sansalone, John J., 422
- Korfiatis, George P.
see Reddi, Lakshmi N., 483
- Korista, Stan
see Ouyang, Leslie, 1452
- Koroth, Surej R.
Comparative Study of Durability Indices for Clay Bricks, 39
Development of New Durability Index for Clay Bricks, 47
Evaluation of Clay Brick Durability Using Ultrasonic Pulse Velocity, 55
- Korvink, S. A.
see Barsom, J. M., 1104
- Kosaka, Iku
see Mijar, Anand R., 1085
- Kosteski, N.
see Cao, J. J., 1110
- Kosuth, Pascal
see Liu, Fubo, 855
- Kotasek, J.
see Vondruska, M., 1384
- Kothekar, A. V.
Investigating the Adequacy of Vertical Design Loads for Shoring, 993
- Koukkari, Heli
see Pajari, Matti, 1140
- Koumousis, Vlas K.
Recursive Formulation of Force Method Programmed in Logic, 93
- Koussis, Antonis D.
Hydraulic Estimation of Dispersion Coefficient for Streams, 684
- Koutitas, Christopher G.
see Karambas, Theofanis V., 1326
- Koutsoftas, Demetrious C., P.E.
see Bertl, David J., P.E., 1531
- Kovacs, A. E.
Prandtl's Mixing Length Concept Modified for Equilibrium Sediment-Laden Flows, 742
- Köylüglu, H. Uğur
Local and Modal Damage Indicators for RC Frames Subject to Earthquakes, 372
- Kraemer, Thomas A., P.E.
Developing Strategy for Establishing Landfill Gas as Cause of Ground-Water Contamination, 1382
- Krafthefer, B.
see Jones, J., 49
- Krajewski, Witold F.
see Anagnostou, Emmanouil N., 809
- Kraman, Michael A., P.E., ed.
Ports '98, 1587
- Kramer, Steven R., P.E.
The Invisible Infrastructure, 1506
- Kranenburg, C.
Erosion of Fluid Mud Layers. I: Entrainment Model, 8
see Winterwerp, J. C., 7
- Kraus, Nicholas C.
see Brown, Cheryl A., 685
- Krikke, H. R.
Mixed Policies for Recovery and Disposal of Multiple-Type Consumer Products, 416
- Krishnappan, Bommanna G.
see Zreik, Diana A., 772
- Krishnaswamy, N. R.
see Lekha, K. R., 532
- Krizek, Raymond J.
see Lo, Wei, 925
- Kruppa, J.
see Franssen, J. M., 1042
- Krylov, Viacheslav
see Slepian, Leonid, 324
- Kuang, J. S.
see Hu, W. C., 1184
- Kucker, Michael A.
see Feldman, Alexander I., 1468
- Kuehn, J.
see Patten, W. N., 212
- Kühn, K.
see Schreck, M., 451
- Kuhnle, Roger A.
Statistics of Sediment Transport in Goodwin Creek, 775
- Kulak, Geoffrey L.
Tension Control Bolts: Strength and Installation, 58
see DiBattista, Jeffrey D., 1111
see Driver, Robert G., 1037
see Driver, Robert G., 1038
- Kulash, Robert, P.E.
Coldhearted Building, 1500
- Kulczykowski, Marek
see Sawicki, Andrzej, 1347
- Kull, Daniel W.
Evolution of Clark's Unit Graph Method to Spatially Distributed Runoff, 792
- Kumar, B.
see Badrah, M. K., 105
see Neilson, A. I., 107
- Kumar, C. Nagaraju
Nonlinear Programming Model for Extensive Irrigation, 867

- Kumar, Naria Raj**
see Virkler, Mark R., 1271
- Kumar, Pradeep**
 Temperature Responses of Biological Phosphorus-Removing Activated Sludge, 397
- Kumar, Sanjeev V.**
 Fatigue Response of Concrete Decks Reinforced with FRP Rebars, 1025
- Kumar, Sudhir**
see Swamee, Prabhata K., 759
- Kumaraswamy, Mohan M.**
 Consequences of Construction Conflict: A Hong Kong Perspective, 926
- Kundu, Tribikram**
see Yang, Wei, 246
- Kunz, John C.**
see Han, Charles S., 106
- Kuo, A. Y.**
see Shen, J., 420
- Kuo, Chen-Ming**
 Effective Temperature Differential in Concrete Pavements, 1208
- Kuo, Chun-Yi**
 Morphological Study of Coarse Aggregates Using Image Analysis, 969
- Kuprenas, John A.**
 Seismic Retrofit Program for Los Angeles Bridges, 849
 Total Quality Management Implementations and Results: Progress Update, 1389
- Kwanyuen, Bancha**
 Heuristic Branch-and-Bound Method For Ground Water Development Planning, 1296
- Labadie, John W.**
see Fredericks, Jeffrey W., 1289
- Lacasse, M. A.**
see Masson, J.-F., 983
- Lachapelle, G.**
see Morley, T., 1182
- Lachemi, Mohamed**
see Dallaire, Eric, 1407
- Ladd, Charles C.**
see Zreik, Diana A., 772
- Lade, Poul V.**
 Experimental Study of Drained Creep Behavior of Sand, 318
see Yamamuro, Jerry A., 606
- Lafebre, Hilda**
 Contaminated Soil Management at Construction Sites, 1376
- Lafiamme, Martin**
see Fafard, Mario, 60
- Lai, Anita**
see Adams, Barry J., 1319
- Lai, C.-Y.**
 Shape of Deployable Membrane Reflectors, 26
- Lai, Jiunnren**
 Effects of Cyclic Loading on Internal Shear Strength of Unreinforced Geosynthetic Clay Liner, 528
- Lai, Peter**
see McVay, Michael, 620
- Laigle, Dominique**
see Coussot, Philippe, 749
- Laiho, Douglas R.**
 Rock Dam Revitalization, 1477
- Lakmazaheri, Sivand**
 Foundation for Research in Computing in Civil Engineering, 92
- Lal, A. M. Wasantha**
 Performance Comparison of Overland Flow Algorithms, 688
 Weighted Implicit Finite-Volume Model for Overland Flow, 755
- Lall, B. Kent**
see Berka, Stanislaw, 1195
- Lam, Frank**
see Clouston, Peggi, 965
- Lam, S. H.**
see Lum, K. M., 1223
- Lam, William H. K.**
 Risk Analysis of Traffic and Revenue Forecasts for Road Investment Projects, 829
see Cheung, C. Y., 1233
see Yim, Paul K. N., 1244
- Lambert, James H.**
see Haimes, Yacov Y., 847
see Olsen, J. Rolf, 1306
- Lambert, Robert**
see Knox, Robert C., P.E., 1022
- Lambrechts, James R., ed.**
 Big Digs Around the World, 1548
- Lambrechts, James R., P.E.**
see Roy, Paul A., P.E., 1438
- Lamoureux, Nicolas**
 Depth Probability Distributions in Stream Reaches, 673
- Lampacher, B. J.**
 Permeability and Sorption Properties of Mature Near-Surface Concrete, 953
- Landreth, Robert E.**
see Daniel, David E., 584
- Lange, D. A.**
see Hjelmstad, K. D., 842
- Langseth, M.**
see Moen, L. A., 1103
- Lankton, Mark R.**
see Sture, Stein, 25
- Lanzo, Giuseppe**
see Vucetic, Mladen, 580
- Laquer, Frederic C.**
see Saari, Robert B., 487

AUTHOR INDEX

Lema

- Lardner, T. J.
see Russell, J. C., 336
- Larkin, James H., P.E.
Securing the Stone, 1412
- Larsen, Peter
see Wang, Zhao Yin, 645
- Lasczynski, Greg
see Thomas, Allen, 1428
- Lassabatere, T.
see Coussy, O., 289
- LaTegola, Antonio
Actions for Verification of RC Structures with FRP Bars, 132
- LaTona, Raymond W.
see Heroux, Jason P., P.E., 1447
- Laudiero, F.
see Capuani, D., 285
- Lauffer, Alexander
see Ben-Haim, Yakov, 154
- Lauzier, C.
see Masson, J.-F., 983
- Lauzon, Robert G.
see DeWolf, John T., 837
- Law, Adrian W. K.
see Findikakis, Angelos N., 691
- Law, Kincho H.
see Han, Charles S., 106
- Law, S. Edward
see Wu, Jiangning, 406
- Law, S. S.
Structural Damage Detection from Incomplete and Noisy Modal Test Data, 360
- Law, William
see Grayson, Paul E., 1480
- Lawrence, F. V.
see Hjelmstad, K. D., 842
- Lawton, Evert C., P.E.
see Pantelides, Chris P., P.E., 1539
- Lay, Jiunn-Jyi
Influence of Hydraulic Loading Rate on UASB Reactor Treating Phenolic Wastewater, 474
Mathematical Model for Methane Production from a Landfill Bioreactor, 462
- LeBlond, David
Control Improvement for Advanced Construction Equipment, 174
- Lee, A.
see Namachchivaya, N. Sri, 24
- Lee, Anthony Wai-Tak
Effect of Lateral Confinement on Initial Dilution of Vertical Round Buoyant Jet, 679
- Lee, B. K.
see McCartney, Bruce L., 1578
- Lee, Fook-Hou
Effect of Corners in Strutted Excavations: Field Monitoring and Case Histories, 558
- Lee, Hyun-Jong
Viscoelastic Constitutive Model for Asphalt Concrete Under Cyclic Loading, 208
Viscoelastic Continuum Damage Model of Asphalt Concrete with Healing, 354
- Lee, In-Won
Efficient Solution Method of Eigenproblems for Damped Structural Systems Using Modified Newton-Raphson Technique, 279
- Lee, J.
see Ng, W. M., 100
see Patten, W. N., 212
- Lee, J. H.
see Popovics, J. S., 369
- Lee, Jaw-Fang
see Huang, Ching-Jer, 341
- Lee, Jeeho
Plastic-Damage Model for Cyclic Loading of Concrete Structures, 316
- Lee, Joseph H. W.
Hydraulics of "Duckbill" Elastomer Check Valves, 693
- Lee, Joseph Hun-Wei
see Lee, Anthony Wai-Tak, 679
- Lee, Kenneth Y.
NAPL Pool Dissolution in Stratified and Anisotropic Porous Formations, 477
- Lee, M.
see Al-Ostaz, A., 244
- Lee, M. M. K.
see Morgan, M. R., 1066
- Lee, Sung C.
Strength of Plate Girder Web Panels under Pure Shear, 1045
- Lee, Terry C.
see Sadek, Shafik E., 387
- Lee, Wen-Jung
see Hsu, Chung-Chieh, 668
see Hsu, Chung-Chieh, 747
- Lee, Y. C.
see Mo, Y. L., 1390
- Léger, Pierre
see Fronteddu, Luciano, 1173
- Lehman, Dale A., P.E.
see Mayo, Lynn M., P.E., 1490
- Leick, Alfred
GLONASS Satellite Surveying, 1187
- Leidy, Joe
see Helwany, Sam, 1258
- Lekha, K. R.
Consolidation of Clay by Sand Drain Under Time-Dependent Loading, 532
- Lema, J. M.
see Puñal, A., 517

Leming

- Leming, Michael L.**
see Mitchell, Jason F., 964
- Lenard, Dennis J.**
see Faniran, Olusegun O., 169
- Lentz, W. Karl**
Optimum Coupling in Thin-Walled, Closed-Section Composite Beams, 27
- Leon, Roberto T.**
Seismic Response of Composite Moment-Resisting Connections. I: Performance, 1119
see Hajjar, Jerome F., 1014
see Hajjar, Jerome F., 1120
see O'Sullivan, David P., 1013
- Leonard, John D., II**
Comparison of Alternate Signal Timing Policies, 1260
- Leonard, Michael F.**
see Gribb, Molly M., 601
- Leonards, Gerald A.**
Failure of Cyanide Overflow Pond Dam, 988
- Leong, E. C.**
see Yang, D. Q., 367
- Leshchinsky, Dov**
see Ling, Hoe I., 525
- Lester, James L.**
Staking Your Claim, 1479
- Lester, Mel**
Pulling Ahead, 1503
- Leu, Horng G.**
see Lin, Sheng H., 405
- Leutheusser, Hans J.**
see Hu, Jin, 253
- Leverington, Robert**
Rebuilding Bosnia, 1419
- Levin, Paul**
Construction Contract Claims, Changes & Dispute Resolution, 1554
- Levinson, David M.**
Speed and Delay on Signalized Arterials, 1230
- Levy, C.**
Geometrical, Mechanical, and Structural Adaptation of Mouse Femora Exposed to Different Loadings, 232
- Levy, Matthys**
A Museum for the Heavens, 1456
- Levy, R.**
Practical Methods of Shape-Finding for Membranes and Cable Nets, 1076
- Lewis, Brian J.**
Aspiring to and Preparing for Engineering Firm Ownership, 913
- Li, Bingjun**
Relationships for Non-Darcy Flow in Rockfill, 670
Theoretical Solution for Seepage Flow in Overtopped Rockfill, 671
- Li, C. W.**
see Yu, T. S., 781

1998 ASCE TRANSACTIONS

- Li, Dingqing**
Method for Railroad Track Foundation Design. I: Development, 555
Method for Railroad Track Foundation Design. II: Applications, 556
- Li, Fu-Sheng**
see Matsui, Yoshihiko, 506
- Li, Heng**
Site-Level Facilities Layout Using Genetic Algorithms, 110
- Li, Hewen**
see Schmidt, Lewis C., 1101
- Li, J. Z.**
see Singh, V. P., 793
- Li, Loretta Y.**
Properties of Red Mud Tailings Produced under Varying Process Conditions, 404
- Li, S.**
see Fwa, T. F., 1206
- Li, Shu-Guang**
Improved Finite-Analytic Methods for Steady-State Transport Problems, 690
- Li, Songnian**
see Easa, Said M., 1016
- Li, T. W.**
see Ouyang, Leslie, 1452
- Li, Victor C.**
see Kanda, Tetsushi, 951
- Li, X. S.**
Effects of Vibration History on Modulus and Damping of Dry Sand, 625
Energy-Injecting Virtual Mass Resonant Column System, 566
Fully Coupled Inelastic Site Response Analysis for 1986 Lotung Earthquake, 578
Linear Representation of Steady-State Line for Sand, 640
- Li, Xiang-Song**
Differentiation of Noisy Experimental Data for Interpretation of Nonlinear Stress-Strain Behavior, 293
- Li, Y. S.**
Three-Dimensional Finite-Element Model for Stratified Coastal Seas, 730
- Li, Yigong**
Assessment of Hindered Settling of Fluid Mudlike Suspensions, 666
- Li, Yu-You**
see Lay, Jiunn-Jyi, 462
- Li, Zhengzhi**
Acoustic Emissions in Fracturing Sea Ice Plate Simulated by Particle System, 213
- Li, Zhong**
Practical Approach to Modeling of Wood Truss Roof Assemblies, 1397
- Liang, Robert Y.**
Temperature and Curling Stress in Concrete Pavements: Analytical Solutions, 1205

AUTHOR INDEX

Liou

- Liao, H. J.**
see Su, S. F., 600
- Liao, Huasheng**
Residual Pressure Feedback Method for Simulation of Free Surface Flow, 768
- Liao, Jui-Tang**
see Ou, Chang-Yu, 599
- Liao, Li-Zhi**
see Mansfield, Christopher M., 1283
- Liapis, Stergios I.**
see Plaut, Raymond H., 1411
- Libo, Yuan**
see Ansari, Farhad, 255
- Lick, Wilbert**
see Roberts, Jesse, 790
- Liedtke, Eric**
see Gilbert, Robert B., 634
- Liehr, S. K.**
see Borden, R. C., 463
- Liew, K. M.**
Application of Wavelet Theory for Crack Identification in Structures, 224
Bending Solution for Thick Plates with Quadrangular Boundary, 205
Free Vibration Analysis of Thick Superelliptical Plates, 222
Vibration of Plates Having Orthogonal Straight Edges with Clamped Boundaries, 228
- Liger, E.**
see Charlet, Laurent, 377
- Liggett, James A.**
Fluid Mechanics: An Interactive Text, 1567
Solutions Manual-Fluid Mechanics: An interactive Text, 1595
- Lim, C. W.**
see Liew, K. M., 222
- Lim, Chen L.**
see Kuprenas, John A., 849
- Lim, Siow-Yong**
Prediction of Live-Bed Scour at Bridge Abutments, 722
Scouring in Long Contractions, 884
- Lin, Bingnan**
see Zhou, Jianjun, 732
- Lin, Chia-Jung**
see Huang, Chiung-Shiann, 308
- Lin, G. S., P.E.**
see Ramsamooj, D. V., P.E., 1254
- Lin, H.**
Experimental Calibration of Bifurcation Superstructure of Nonlinear System, 266
- Lin, H. D.**
Stress-Strain-Time Function of Clay, 552
- Lin, Horn-Da**
see Ou, Chang-Yu, 599
- Lin, Hsin-Chi**
see Cheng, Jing-Ru, 822
- Lin, Huijie**
see Hwang, Howard H. M., 841
- Lin, Jyh-Ping**
see Wu, Chao-Hsiung, 482
- Lin, King L.**
see Surampalli, Rao Y., 1380
- Lin, Ming-Chung**
see Jan, Chyan-Deng, 1357
- Lin, Pin-Sien**
Back-Calculation of Concrete Pavement Modulus Using Road-Rater Data, 1210
- Lin, Sheng H.**
Determination of Oxygen Diffusion Coefficient in Wastewaters, 405
- Lin, Tze M.**
see Lin, Sheng H., 405
- Lin, Wei**
see Reed, Brian E., 1374
- Lin, Y. H.**
see Su, S. F., 600
- Lin, Y. K.**
see Cai, G. Q., 311
- Lin, Yu-Feng**
see Sawyer, Charles S., 1312
- Linden, Karl G.**
UV Acceptance, 1433
- Lindgren, Mark**
see McCartney, Bruce L., 1578
- Lindly, Jay K.**
Open-Graded Highway Bases Make Permeameter Setup Important, 1213
- Lindquist, Eric S., P.E.**
see Berti, David J., P.E., 1531
- Liner, Barry L.**
see deMonsabert, Sharon, 199
- Ling, Chi-Hai**
see Chen, Cheng-lung, 245
- Ling, Hoe I.**
Estimation of Municipal Solid Waste Landfill Settlement, 525
Tensile Properties of Geogrids Under Cyclic Loadings, 597
- Lingireddy, Srinivasa**
Improved Operation of Water Distribution Systems Using Variable-Speed Pumps, 202
Modified Pipe Network Model for Incorporating Peak Demand Requirements, 1313
- Liou, Chyr Pyng**
Limitations and Proper Use of the Hazen-Williams Equation, 756
- Liou, Donald D.**
Effects of Construction Joint in Mass Flowable Concrete, 955

Lipičnik, Martin

New Form of Road/Railway Transition Curves, 1264

Little, R. R.

Interference Assemblies, 209

Littles, Jerrol W.

Ultrasonic Techniques to Characterize Pultruded Composite Members, 129

Liu, Chi-Tseng

see Lade, Poul V., 318

Liu, Chiu

Road Profiles, Vehicle Dynamics, and Human Judgment of Serviceability of Roads: Spectral Frequency Domain Analysis, 1207

Liu, Fubo

Development and Evaluation of Canal Automation Algorithm CLIS, 855

Liu, Hanlong

see Li, Xiang-Song, 293

Liu, Jing

Finite-Element Model for Confined Concrete Columns, 1135

see Foster, Stephen J., 1174

Liu, Yu-Fen

see Chen, Jyh-Cherng, 468

Livneh, Moshé

Simplified Formulation of Virgin and Overlaid Pavement Deterioration Models, 834

see Divinsky, Michael, 1268

Lo, Edmond Y. M.

Flexible Dual Membrane Wave Barrier, 1353

Lo, M. K.

see Wong, S. C., 1225

Lo, Wei

Contractor Selection Process for Taipei Mass Rapid Transit System, 925

Löfsten, Hans

Maintenance of Municipal Infrastructure, 844

Logan, Bruce E.

Growth Kinetics of Mixed Cultures under Chlorate-Reducing Conditions, 496

Loganathan, N.

Analytical Prediction for Tunneling-Induced Ground Movements in Clays, 604

Lohnes, R. A.

see Kjartanson, B. H., 537

Lok, Tat-Seng

Flexural Behavior of Steel Fiber Reinforced Concrete, 962

Lokaj, Stanley, ed.

see Galloway, Rodney G., ed., 1596

Londhe, Y. B.

see Jangid, R. S., 1077

Loosemore, M.

Psychology of Accident Prevention in the Construction Industry, 924

Lopez, M. A.

see Carvalho, H. O., 859

Loraine, Gregory A.

see Burris, David R., 497

Lord, Arthur E., Jr.

Steam Stripping Organics from "Fluidized" Soils (Versus Confined Soils), 418

Lorenc, Stephen J.

see Carver, Catherine, 898

Lores, Georgina V.

see Uhlik, Felix T., 51

Loucks, D. P.

see El Geriani, A. M., 1316

Loucks, Daniel P.

see Jin, Kang-Ren, 1284

Loucks, Eric D., ed.

Water Resources and the Urban Environment, 1607

Lourenço, Paulo B.

Continuum Model for Masonry: Parameter Estimation and Validation, 1095

Love, Peter E. D.

see Li, Heng, 110

Low, B. K.

Slope Reliability Analysis Using Generalized Method of Slices, 559

Lower, D. A.

see Cousins, T. E., 991

Lu, Chungying

see Huang, Chiajim, 467

Lu, Jau-Yau

Characteristics of Shallow Rain-Impacted Flow over Smooth Bed, 788

Lu, Jian John

Evaluation of Traffic Markings in Cold Regions, 1199

Lu, Li-Teh

LQG/LTR Control Methodology in Active Structural Control, 262

Lü, Pengmin

Efficient Algorithm for Fatigue Life Calculations Under Broad Band Loading Based on Peak Approximation, 234

Lu, Q.

see Dagher, H. J., 1130

Lu, Tai-Fang

see Lu, Jau-Yau, 788

Luk, Kin Choi

see Ball, James E., 806

Luke, Barbara A.

Application of SASW Method Underwater, 575

Lum, K. M.

Speed-Flow Modeling of Arterial Roads in Singapore, 1223

Lumbers, Jeremy

see Vairavamoorthy, Kalanithy, 779

AUTHOR INDEX

Mansfield

- Luna, Ronaldo**
Spatial Liquefaction Analysis System, 96
- Lung, Wu-Seng**
Trends in BOD/DO Modeling for Wasteload Allocations, 495
see Jin, Kang-Ren, 1284
- Luo, Weimin**
see Oehlers, D. J., 1050
- Luong, Huan**
see White, Daniel M., 80
- Lyles, Richard W.**
see Dorothy, Paul W., 1217
- Lynch, Larry N.**
see Kuo, Chun-Yi, 969
- Lynch, Stanford W., ed.**
see Sproule, William J., ed., 1547
- Lynsdale, Cyril**
see Mukhopadhyaya, Phalguni, 123
- Mabsout, Mounir E.**
Effect of Continuity on Wheel Load Distribution in Steel Girder Bridges, 68
- Mackenthun, Alan A.**
Effect of Flow Velocity on Sediment Oxygen Demand: Experiments, 400
- MacLeod, I. A.**
see Badrah, M. K., 105
see Neilson, A. I., 107
- MacRae, Gregory A.**
see Kawashima, Kazuhiko, 1083
- Macrina, JoAnn J., P.E.**
see Guillory, Blake C., P.E., 1535
- Madabhushi, S. P. G.**
Seismic Response of Gravity Quay Walls. II: Numerical Modeling, 565
- Madanat, Samer**
Selectivity Bias in Modeling Highway Pavement Maintenance Effectiveness, 843
- Madjidi, Farzin**
see Kuprenas, John A., 849
- Madramootoo, C. A.**
see Mejia, M. N., 866
- Madsen, Ole S.**
see Ravens, Thomas M., 1327
see Zreik, Diana A., 772
- Magbanua, Benjamin S., Jr.**
Effect of Recycle and Axial Mixing on Microbial Selection in Activated Sludge, 491
- Magoon, Orville T., ed.**
California and the World Ocean '97, 1549
- Mahendran, M.**
Pull-Out Strength of Steel Roof and Wall Cladding Systems, 1153
- Maher, Ali, ed.**
Soil Improvement for Big Digs, 1594
- Maher, Mary Lou, ed.**
see Wang, Kelvin C. P., ed., 1553
- Maheshwari, B. L.**
see Esfandiari, M., 862
- Mahin, Stephen A.**
National Program to Improve Seismic Performance of Steel Frame Buildings, 1008
- Maji, Arup K.**
Smart Prestressing with Shape-Memory Alloy, 342
- Majid, M.Z. Abd.**
Factors of Non Excusable Delays That Influence Contractors' Performance, 923
- Makris, Nicos**
Viscous Heating of Fluid Dampers. I: Small-Amplitude Motions, 352
Viscous Heating of Fluid Dampers. II: Large-Amplitude Motions, 353
- Maksimovic, C. T.**
see Deletic, Ana B., 479
- Malaterre, P. O.**
PILOTE: Linear Quadratic Optimal Controller for Irrigation Canals, 875
- Malaterre, Pierre-Olivier**
Classification of Canal Control Algorithms, 850
see Liu, Fubo, 855
- Malek, A. M.**
see Saadatmanesh, H., 134
- Malek-Mohammadi, Ehsanolah**
Irrigation Planning: Integrated Approach, 1310
- Malhotra, Praveen K.**
Dynamics of Seismic Pounding at Expansion Joints of Concrete Bridges, 304
Seismic Strengthening of Liquid-Storage Tanks with Energy-Dissipating Anchors, 1069
- Malina, Joseph F., Jr.**
see Barrett, Michael E., 389
see Barrett, Michael E., 509
see Irish, Lyn B., Jr., 493
- Malley, James O.**
see Mahin, Stephen A., 1008
- Mamaghani, Iraj H. P.**
see Banno, Shigeru, 252
- Mamone, Anthony C.**
see Tuthill, Andrew M., 91
- Mancini, Giuseppe**
Behavior of Nonlinearly Restrained Slender Bridge Piers, 71
- Mandal, Purnendu**
Modeling Helps in Understanding Policy Alternatives: A Case, 901
- Manoranjana, Valipuram S.**
see Burris, David R., 497
- Mansfield, Christopher M.**
Utilizing Sparsity in Time-Varying Optimal Control of Aquifer Cleanup, 1283

Mao, Baohua, ed.

see Yang, Zhaoxia, ed., 1601

Marchi, Lorenzo

see Coussot, Philippe, 749

Marelius, Frederick

Experimental Investigation of Flow Past Submerged Vanes, 709

Marí, A. R.

see Cruz, P. J. S., 1056

Marinelli, Fred

Semianalytical Solution to Richards' Equation for Layered Porous Media, 890

Marino, Gennaro G., P.E.

Siting of Prison Complex above Abandoned Underground Coal Mine, 614

Mariño, M. A.

see Carvallo, H. O., 859

Mariño, Miguel A.

see Hantush, Mohamed M., 820

see Hantush, Mohamed M., 821

Markel, Keith, P.E.

see Ovcharovichova, Janka, P.E., 1398

Marlowe, Mark

VOC Ground-Water Sampling Decontamination Procedures: A Case Study, 1367

Marsh, Cedric

Design Method for Buckling Failure of Plate Elements, 1117

Marsh, Charles

Comparison of Failure Rates in Conduits for Underground Heat Distribution, 1269

see Carnahan, James V., 1270

Marshall, Richard D.

see Mehta, Kishor C., 1573

Marti, Peter

see Kaufmann, Walter, 1178

Martin, Derrel

see Enciso-Medina, Juan, 860

Martin, Geoffrey R.

see Adalier, Korhan, 573

Martin, Timothy R., ed.

Stability of Natural Slopes in the Coastal Plain, 1598

Martinelli, David R.

Virtual Flight Data Recorder for Commercial Aircraft, 18

Martinelli, Thomas J.

Climate Control, 1489

Martinez y Cabrera, Francesco

see Mancini, Giuseppe, 71

Martínez-Austria, Polioptro

Fluidic Device for Surge Flow Irrigation, 885

Martín-Pérez, B.

Mechanics of Concrete Participation in Cyclic Shear Resistance of RC, 1094

Martín-Vide, J. P.

Local Scour at Piled Bridge Foundations, 698

Martirossyan, Armen

see Xiao, Yan, 1052

Maruoka, Yoshiomi

see Nakashima, Masayoshi, 1157

Masih, Rusk

Reliability of Energy Method to Predict Lift Slab Structures Stability, 1006

Maslia, Morris L., P.E.

see Rodenbeck, Sven E., P.E., 1366

Mason, Ronald R.

Ethics: A Professional Concern, 4

Massimino, Maria R.

see Maugeri, Michele, 581

Massmann, Joel W.

see Poulsen, Tjalfé G., 391

see Poulsen, Tjalfé G., 492

Masson, J.-F.

Sealant Degradation During Crack Sealing of Pavements, 983

Mastrapa, Juan Carlos

see Mirmiran, Amir, 136

Matalas, Nicholas C.

see Haines, Yacov Y., 847

Matasović, Neven

Cyclic Characterization of Oil Landfill Solid Waste, 544

Mathijssen, J. P. M.

see van Benthum, W. A. J., 402

Mathis, Richard

see Ghaffori, Nader, 957

Matson, Michael H., P.E.

see Monroe, Kevin, P.E., 1467

Matsui, Yoshihiko

Overall Adsorption Isotherm of Natural Organic Matter, 506

Matsumoto, M. R.

see Ganguly, C., 407

see Ganguly, C., 512

Matsumoto, Shinji

Construction Engineering Approach for Lunar Base Development, 34

Matthews, Susan L., P.E.

Losing Ground, 1443

Mattila, Kris G.

Resource Leveling of Linear Schedules Using Integer Linear Programming, 168

Matzat, James W., P.E.

see Matthews, Susan L., P.E., 1443

Mau, S. T.

Analytical Study of Spacing of Lateral Steel and Column Confinement, 1054

Small-Column Compression Tests on Concrete Confined by WWF, 1053

AUTHOR INDEX

Mehrabi

- Maugeri, Michele**
Observed and Computed Settlements of Two Shallow Foundations on Sand, 581
- Mauldon, Matthew**
An Energy Approach to Rock Slope Stability Analysis, 256
- Maxwell, Donald A.**
Optimization of Crew Configurations Using Activity-Based Costing, 159
- Maxwell, Steven**
A Merger Manual, 1424
- Maylie, John**
see Denes, Thomas A., 1478
- Mayo, Lynn M., P.E.**
Step by Step, 1490
- Mays, David C.**
Matrix Approach to Contaminant Transport Potential, 1377
- Mays, G. C.**
Resistance-Deflection Functions for Concrete Wall Panels with Openings, 1089
- McCabe, Brenda**
Belief Networks for Construction Performance Diagnostics, 99
- McCabe, Raymond J., P.E.**
see Davidson, William A., P.E., 1528
- McCaffer, Ronald**
see Majid, M.Z. Abd., 923
- McCambridge, James A.**
TQM Implementation in State Departments of Transportation: View from the Firing Line, 902
- McCarter, W. J.**
Surface-Treated Slag Concrete: Assessing Performance Under Cyclic Wetting, 977
- McCarthy, T. S.**
see Merry, C. L., 1191
- McCartney, Bruce L.**
Inland Navigation: Locks, Dams, and Channels, 1578
- McClellan, Gary, P.E.**
see Grodner, Michael, P.E., 1532
- McCornick, Peter G.**
see Grabow, Garry L., 816
- McCorquodale, J. A.**
see Ye, Jian, 729
- McCuen, Richard H.**
Balancing Corporate and Personal Values, 915
- McCullough, B. Frank, P.E.**
see Delatte, Norbert J., Jr., P.E., 996
- McCutcheon, Steven C.**
see Chen, Y. David, 409
see Chen, Y. David, 410
- McDermott, John F.**
Leaning-Structure Statics—Flying Buttresses and Mayan Vault Ceilings, 45
- McDonald, Glen, P.E.**
Over the Top Concrete, 1414
- McEnroe, B.**
see Parr, A., 478
- McEvoy, Steven, P.E.**
see Duplancic, Neno, P.E., 1463
- McFarland, M. J.**
see Basahi, J. M., 878
- McGharen, John, P.E.**
Brownfields by the Book, 1520
- McGillivray, Drew L.**
see Hilton, Amy B. Chan, 1333
- McGuire, Jeffrey W.**
Seismic Evaluation of Pile-Founded Highway Bridge on Saturated Peat, 1032
- McGuire, Patrick M., P.E.**
Overlooked Assumption in Nonconstrained Post Embedment, 1387
- McHale, Frank, P.E.**
see Abrahams, Michael, P.E., 1413
- McInnis, Duncan A.**
see Ghidaoui, Mohamed S., 692
- McIntyre, Charles**
Decision Support System for Residential Land Development Site Selection Process, 52
- McIsaac, Gregory F.**
Engineers' Role in Sustainable Development: Considering Cultural Dynamics, 1023
- McKenzie, David E.**
see Orth, Robert, 1378
- McKnight, Claire E.**
see Isaacs, Beatrice, 846
- McLean, David I.**
see McGuire, Jeffrey W., 1032
- McNeil, Sue, ed.**
see Frost, J. David, ed., 1577
- McNerney, Michael T., ed.**
Airport Facilities: Innovations for the Next Century, 1542
- McPherson, Charles H., Jr.**
see Marlowe, Mark, 1367
- McVay, Michael**
Centrifuge Testing of Large Laterally Loaded Pile Groups in Sands, 620
- Meegoda, Jay N., ed.**
see Benson, Craig H., ed., 1590
- Meena, Jack M.**
see Burges, Stephen J., 802
- Meerdink, J. S.**
Unsaturated Hydraulic Conductivity of Two Compacted Barrier Soils, 6
- Mehrabi, Armin B., P.E.**
Unified Finite Difference Formulation for Free Vibration of Cables, 1165

Mehrotra, Indu

see Kumar, Pradeep, 397

Mehta, Ashish J.

see Li, Yigong, 666

see Vinzon, Susana B., 1340

Mehta, Kishor C.

Guide to the Use of the Wind Load Provisions of
ASCE 7-95, 1573

Mejia, M. N.

Improved Water Quality through Water Table Management in Eastern Canada, 866

Melby, Jeffrey A.

Progression and Variability of Damage on Rubble
Mound Breakwaters, 1356

Melo, Elói

Wave Propagation in Circular Jettied Channels, 1322

Melville, B. W.

see Ettema, R., 737

Melville, Bruce W.

see Ettema, Robert, 723

Mendell, Wendell W.

Role of Lunar Development in Human Exploration of
the Solar System, 30

Mendelsohn, Roy

Teamwork - the Key to Productivity, 896

Méndez, R.

see Puñal, A., 517

Merry, C. L.

GPS Heighting in Okavango Delta, 1191

Merry, Scott, M., P.E.

see Pantelides, Chris P., P.E., 1539

Meselhe, E. A.

Numerical Flow Model for Fish Diversion Studies at
Wanapum Dam, 784

Michaels, Paul, P.E.

In-Situ Determination of Soil Stiffness and Damping,
590

Michel, Henry L.

The Next 25 Years: The Future of the Construction
Industry, 933

Mierczyński, Jacek

see Sawicki, Andrzej, 1347

Mijar, Anand R.

Continuum Topology Optimization for Concept Design
of Frame Bracing Systems, 1085

Miknis, Francis P.

see Williams, Theresa M., 967

Mil-Homens, João

see Câmara, António S., 830

Millitsky, Jarbas

see Consoli, Nilo C., 605

Millar, Robert G.

Stable Width and Depth of Gravel-Bed Rivers with
Cohesive Banks, 763

Millard, S. G.

Modeling of Subsurface Pulsed Radar for Nondestructive
Testing of Structures, 976

Miller, Thomas H.

see Li, Zhong, 1397

Miller-Henson, Melissa

see Magoon, Orville T., ed., 1549

Mills, R. S.

see Burt, C. M., 857

Minato, Takayuki

Data-Driven Analysis of "Corporate Risk" Using Historical
Cost-Control Data, 144

Mingham, C. G.

High-Resolution Finite-Volume Method for Shallow
Water Flows, 718

Minnetyan, Levon, P.E.

see Huang, Dade, 118

Minsker, Barbara Spang

Computational Issues for Optimal In-Situ Bioremediation
Design, 1286

Dynamic Optimal Control of In-Situ Bioremediation of
Ground Water, 1297

Mirmiran, Amir

Effect of Column Parameters on FRP-Confined Concrete,
136

see Samaan, Michel, 1137

Mishalani, Rabi

see Madanat, Samer, 843

Mishra, Prafulla K.

see Chitale, Srikrishna V., 659

Misra, Arun K.

see Modi, Vinod J., 19

Mistry, J.

see Kang, C. T., 1109

Mitchell, J. K.

see Salgado, R., 607

see Yu, H. S., 538

Mitchell, James K.

see Zornberg, Jorge G., 587

see Zornberg, Jorge G., 588

Mitchell, Jason D.

see Epstein, Howard I., 1392

Mitchell, Jason F.

Quantity of Alkali Silica Gel and Its Effect on Concrete
Properties, 964

Mitts, Steven

see Kulash, Robert, P.E., 1500

Miura, Nobuyasu

see Cousineau, Leslie, 1555

Miyashita, Satoshi

see Goto, Yoshiaki, 1106

Miyojim, M.

see Cheng, H. D., 104

AUTHOR INDEX

Moore

- Mizerany, Joseph E.**
HWIR-Media Rekindles Corrective Action Management Unit Rule, 1379
- Mizumura, Kazumasa**
Free Surface Flow over Permeable Wavy Bed, 757
- Mizuno, Eiji**
see Banno, Shigeru, 252
- Mrakar, Paul F., Sr.**
The Oklahoma City Bombing: Analysis of Blast Damage to the Murrah Building, 1002
see Corley, W. Gene, 1001
see Sozen, Mete A., 1003
- Mo, C.**
see Patten, W. N., 212
- Mo, Joseph K. M.**
see Ouyang, Leslie, 1452
- Mo, Y. L.**
Early Form Removal of Reinforced Concrete Slabs, 1390
- Moawad, Ahmed K.**
Dilution of Circular Turbulent Nonbuoyant Surface Jets in Crossflows, 701
Dilution of Multiple Nonbuoyant Circular Jets in Crossflows, 381
- Modi, Vinod J.**
Attitude Control of Space Platform Based Tethered Satellite System, 19
- Moen, L. A.**
Elastoplastic Buckling of Anisotropic Aluminum Plate Elements, 1103
- Moffat, D. G.**
see Kang, C. T., 1109
- Moghazi, Hosam El-Din M.**
Estimating of Hazen-Williams Coefficient for Polyethylene Pipes, 1220
- Mohammadi, Jamshid**
Bridge Fatigue Life Estimation From Field Data, 1399
- Mohan, Ram K., P.E.**
Bottoms Up, 1534
- Mohan, S.**
see Pattnaik, S. B., 1243
- Mohraz, Bijan**
see Sadek, Fahim, 326
- Mohri, Yoshiyuki**
see Ling, Hoe I., 525
see Ling, Hoe I., 597
- Mohrig, David**
see Parker, Gary, 761
see Parker, Gary, 762
- Mohsen, Mousa S.**
Evaluation of In-Situ Pavement Moduli Using High Resolution Tiltmeter, 1253
- Mokhtar, Ahmed**
Information Model for Managing Design Changes in a Collaborative Environment, 98
- Moldrup, Per**
see Poulsen, Tjalfé G., 391
see Poulsen, Tjalfé G., 492
- Molenaar, Keith R.**
Model for Public Sector Design-Build Project Selection, 195
- Molinas, Albert**
Effect of Size Gradation on Transport of Sediment Mixtures, 740
Shear Stress around Vertical Wall Abutments, 744
- Moline, Gerilynn R.**
Representative Ground Water Monitoring in Fractured Porous Systems, 436
- Molins, Climent**
Capacity of Masonry Arches and Spatial Frames, 1096
- Mollah, M. A.**
see Ismael, Nabil F., 618
- Molls, Frank**
see Molls, Thomas, 651
see Molls, Thomas, 704
- Molls, Thomas**
Friction Slope in Depth-Averaged Flow, 651
Space-Time Conservation Method Applied to Saint Venant Equations, 704
- Molnit, Thomas**
see McVay, Michael, 620
- Monde, Michelle, P.E.**
Salvaging Streams, 1475
- Monroe, Kevin, P.E.**
Making Way for Water, 1467
- Montserrat, Joaquín**
Estimation of Surface Volume in Hydrological Models for Border Irrigation, 882
- Monteiro, Paulo**
see Geyskens, Philippe, 1034
- Monteiro, Paulo J. M.**
see Nemati, Kamran M., 968
- Montes, J. S.**
Characteristics of Undular Hydraulic Jumps: Experiments and Analysis, 669
see Chanson, H., 872
- Montes, Sergio**
Hydraulics of Open Channel Flow, 1575
- Moog, Douglas B.**
Analysis of Reaeration Equations Using Mean Multiplicative Error, 386
- Moon, Sungwoo**
Graphic-Based Human-Machine Interface for Construction Manipulator Control, 176
- Mooney, Michael A.**
A Unique Critical State for Sand?, 630
- Moore, Ian D.**
Nonlinear Predictions for HDPE Pipe Response Under Parallel Plate Loading, 1234
see El-Sawy, Khaled, 1169

Morad, Munir*see* Choudhry, Sohail, 1190**Morey, Dennis C.***see* McIsaac, Gregory F., 1023**Morgan, M. R.**

Stress Concentration Factors in Tubular K-Joints Under In-Plane Moment Loading, 1066

Morisako, Kiyotaka*see* Nakashima, Masayoshi, 1157*see* Suita, Keiichi, 1158**Morley, T.**

Pseudolite Augmentation for OTF Ambiguity Resolution in Shipborne Mode, 1182

Morochnik, V.

Identification of Dynamic Properties of OII Landfill, 543

Morris, Carl E.*see* Stormont, John C., 553**Morris, G.***see* Hassan, Sherif K., 1041**Morris, Gregory, P.E.**

Interest in Deposits (available only in Geoenvironmental Special Issue), 1426

Moser, David A., ed.*see* Haimes, Yacov Y., ed., 1591**Mostafa, E. A.***see* Ettema, R., 737**Moström, Annika***see* Klisinski, Marek, 303**Motro, R.***see* Djouadi, S., 21**Mottram, J. T.***see* Hall, J. E., 122**Mountain, Stewart, P.E.**

Oil in the Soil, 1523

Moustafa, Mahmoud M.

Spatial Modeling of Soil Properties for Subsurface Drainage Projects, 879

Muchaxo, Joaquim*see* Câmara, António S., 830**Mujumdar, P. P.***see* Sasikumar, K., 1290**Mukhopadhyay, Chirantan**

Scheduled Departure, 1440

Mukhopadhyay, Gan, P.E.

Preparing for Pier A, 1482

Mukhopadhyaya, Phalguni

Optimizing Structural Response of Beams Strengthened with GFRP Plates, 123

Mulcahy, Lynda J.*see* Sleep, Brent E., 490**Mulligan, Ann E.**

Genetic Algorithms for Calibrating Water Quality Models, 398

Mulpuru, S. R.*see* Balachandrar, R., P.E., 494**Mulvey, Dennis L.**

Project Delivery Trends: A Contractor's Assessment, 946

Mumayiz, Saleh A., ed.

Airport Modeling and Simulation, 1543

Munter, Rein*see* Trapido, Marina, 457**Murray, T. M.***see* Wheeler, A. T., 1043**Murtha-Smith, Erling***see* Epstein, Howard L., 1392**Musson, Stephen**

Management of Discarded Pharmaceuticals, 1372

Muthukrishnan, Shanmuganathan*see* Wang, Yi-Tin, 401**Myer, Larry***see* Vasco, D. W., 526**Nachabe, M. H., P.E.**

Refining the Definition of Field Capacity in the Literature, 880

Nadaoka, Kazuo

Shallow-Water Turbulence Modeling and Horizontal Large-Eddy Computation of River Flow, 703

Naess, A.

Estimation of Long Return Period Design Values for Wind Speeds, 239

Nagaraj, V.

Fatigue Behavior and Connection Efficiency of Pultruded GFRP Beams, 120

Nagaya, Kazuhiro*see* Kawashima, Kazuhiko, 1083**Nahir, Michael***see* Biggar, Kevin W., 85**Nakamura, Tsuneyoshi***see* Ohsaki, M., 1166**Nakashima, Masayoshi**

Test of Welded Beam-to-Column Subassemblages. I: Global Behavior, 1157

see Suita, Keiichi, 1158**Nakato, Tatsuaki**

Sediment Control at Water Intakes Along Sand-Bed Rivers, 716

Nakayama, A.

Air-Permeability as a Measure of Rock Mass Behavior, 546

Nam, Do H., P.E.

Analyzing Freeway Traffic under Congestion: Traffic Dynamics Approach, 1222

Namachchivaya, N. Sri

Dynamics of Nonlinear Aeroelastic Systems, 24

Nanni, Antonio*see* Khalifa, Ahmed, 138

AUTHOR INDEX

Noda

- Napolitano, Marcello R.
see Martinelli, David R., 18
- Narupiti, Sorawit
see Dorothy, Paul W., 1217
- Nasello, C.
see Aronica, G., 1303
- Nauroy, J. F.
see Chow, F. C., 549
- Navon, R.
see Rosenfeld, Y., 161
see Warszawski, A., 143
- Nazarian, Soheil
see Ganji, Vahid, 595
- Neal, Jim
Light Rail as Planned, 1442
- Neal, John A.
see Berg, Eric R., 973
- Negret, Ihosvany
see Maji, Arup K., 342
- Negussey, Dawit, P.E.
Putting Polystyrene to Work, 1435
- Neilson, A. I.
Hybrid Environment for Standards Processing, 107
- Neilson, Frank
see McCartney, Bruce L., 1578
- Nelson, Alan
see Lingireddy, Srinivasa, 1313
- Nelson, Robert
see Wescott, James, 1361
- Nemati, Kamran M.
A New Method for Studying Stress-Induced Micro-cracks in Concrete, 968
- Nesarajah, S.
see Thevanayagam, S., 529
- Nestleroth, David E.
see Biegel, Steven L., 1493
- Nestmann, Franz
see Wang, Zhao Yin, 645
- Neuenhofer, Ansgar
Geometrically Nonlinear Flexibility-Based Frame Finite Element, 1102
- Neumann, Edward S., ed.
see Sproule, William J., ed., 1547
- Neves, Jorge N.
see Câmara, António S., 830
- Newark, A. C. B.
see Roberts, T. M., 9
- Newcomb, David E., P.E., ed.
Cold Regions Impact on Civil Works, 1552
- Ng, Adam, P.E.
see Collins, Patti, 1530
- Ng, Charles W. W.
Centrifuge Modeling of Spread-Base Integral Bridge Abutments, 561
- Observed Performance of Multipropped Excavation in Stiff Clay, 608
- Stress Transfer and Deformation Mechanisms of Diaphragm Wall Panel, 585
- Ng, Kim-Chwee
see Cheu, Ruey-Long, 1262
- Ng, S. Thomas
Verification and Validation of Case-Based Pre-qualification System, 109
- Ng, W. M.
Simulation Modeling and Management of a Large Basement Construction Project, 100
- Ng, Yew-Liam
see Cheu, Ruey-Long, 1262
- Nguyen, T.
Controller Designs for Seismic-Excited Buildings with Bounded Actuators, 312
- Ni, Chun
see Chui, Ying H., 1035
- Nicell, James A.
see Buchanan, Ian D., 470
- Nichols, John
see Reddi, Lakshmi N., 483
- Nicholson, Alan
Superelevation, Side Friction, and Roadway Consistency, 1249
- Nicot, Jean-Philippe
Shallow Subsurface Characterization of Gas Transport in Playa Wetland, 499
- Nie, Jianguo
see Cai, Chun S., 1401
- Nielsen, Søren R. K.
see Köylüglü, H. Ugur, 372
- Nii Odai, Samuel
see Onizuka, Kotaro, 705
- Nikolaidis, N. P.
see Hu, H.-L., 455
see Hu, H.-L., 456
- Nikora, Vladimir I.
ADV Measurements of Turbulence: Can We improve Their Interpretation?, 721
- Niño, Yarko
Engelund's Analysis of Turbulent Energy and Suspended Load, 268
- Experiments on Saltation of Sand in Water, 764
- Nishigaki, M.
see Schreck, M., 451
- Nishikawa, Tracy
Water-Resources Optimization Model for Santa Barbara, California, 1308
- Niu, Yan-Zhou
see Liang, Robert Y., 1205
- Nobre, Edmundo
see Câmara, António S., 830
- Noda, Shigeru
Kriging of Lognormal Stochastic Field, 348

- see* Hoshiya, Masaru, 261
- Noh, Jae Ho**
see Kim, Jin Keun, 982
- Noike, Tatsuya**
see Lay, Jiunn-Jyi, 462
- Nolan, Jeremy B.**
see Western, Andrew W., 680
- Nollet, M.-J.**
see Chaallal, O., 126
- Norris, G.**
see Ashour, M., 554
- Norrish, Alison R. M.**
see Ng, Charles W. W., 561
- Norton, Douglas J.**
see Chen, Y. David, 410
- Norville, H. Scott**
Behavior and Strength of Laminated Glass, 210
- Novak, John T., P.E.**
see Diz, Harry R., 459
- Novak, Lawrence**
see Iyengar, Hal, 1429
- Novokshchenov, Vladimir, P.E.**
The Search for HPC (Available in Structural Engineering Special Issue only), 1491
- Nowak, Andrzej S.**
see Saraf, Vijay, 66
- Nuismer, Ralph J.**
see Gergely, Ioan, 135
- Nutter, Wade L.**
see Chen, Y. David, 409
see Chen, Y. David, 410
- Obaidat, Mohammed Taleb**
Video System to Monitor Archeological Sites Using Ground-Based Photogrammetry, 1181
see Abdullah, Waddah S., 961
- Obata, Makoto**
see Goto, Yoshiaki, 1163
- Ochsendorf, John A.**
Record Spans in Japan, 1420
- O'Connor, Donald J.**
Chemical Reactions and Gas Transfer in Natural Waters, 384
- O'Connor, Thoms**
see Field, Richard, 1299
- Oda, Masanobu**
see Iwashita, Kazuyoshi, 243
- Odgaard, A. J.**
see Meselhe, E. A., 784
- Odgaard, A. Jacob**
see Barkdoll, Brian D., 654
see Sinha, Sanjiv K., 642
- O'Donoghue, Tom**
see Sutherland, James, 1334
see Sutherland, James, 1358
- Oehlers, D. J.**
Upgrading Continuous Reinforced Concrete Beams by Gluing Steel Plates to Their Tension Faces, 1050
- Ogden, Fred L.**
see Nakato, Tatsuaki, 716
- Oh, Byung Hwan**
Structural Damage Assessment with Combined Data of Static and Modal Tests, 1129
- O'Hara, Michael, P.E.**
Future Fire Codes, 1453
- Ohrn, L. Greg**
Performance-Related Specifications for Highway Construction, 142
- Ohsaki, M.**
Shape-Size Optimization of Plane Trusses with Designer's Preference, 1166
- Ojha, Chandra Shekhar P.**
see Swamee, Prabhata K., 759
- Oji, Lawrence N.**
Mercury Disposal Via Sulfur Reactions, 488
- Olenik, Thomas J., P.E.**
Statewide Standardization of Site Improvement Standards, 1279
- Olomolaiye, Paul O.**
see Chinyio, Ezekiel A., 907
- Olorunsogo, Folarin T.**
Effect of GGBFS Particle-Size Distribution on Mortar Compressive Strength, 975
- Olsen, J. Rolf**
Input-Output Economic Evaluation of System of Levees, 1306
- Olsen, Shari R.**
see Logan, Bruce E., 496
- Olson, Roy E.**
Settlement of Embankments on Soft Clays, 551
Settlement of Embankments on Soft Clays, 586
- Olzewski, P.**
see Lum, K. M., 1223
- Oluwoye, Jacob O.**
see Faniran, Olusegun O., 169
- O'Malley, Anthony P., P.E.**
Higher Ground, 1501
- Omara, Abdel-Aziz M.**
Model for Analysis of Buried Pipes Installed Using Trenchless Construction Methods, 828
- Omidvar, Bijan**
Shear Coefficient in Orthotropic Thin-Walled Composite Beams, 119
- O'Neill, Ian C.**
see Western, Andrew W., 680
- O'Neill, Luis Pumarada**
see Silva-Araya, Walter F., 1589
- O'Neill, Michael W.**
see Kim, Myung Hak, 596
see Park, Junboun, 617

AUTHOR INDEX

Pandey

- Ong, Say Kee
see Chao, Keh-Ping, 501
- Onizuka, Kotaro
Burgers' Equation Model for Unsteady Flow in Open Channels, 705
- Ono, Kiyohisa
see Goto, Yoshiaki, 357
- Ono, Tetsuro
see Zhao, Yan-Gang, 1099
- Ordóñez-Candelaria, Víctor R.
see Davalos-Sotelo, Raymundo, 1075
- Orr, Joel
Identity Crisis, 1462
- Orth, Kenneth D.
see Hansen, William J., 1362
- Orth, Robert
Reductive Dechlorination of DNAPL Trichloroethylene by Zero-Valent Iron, 1378
- Ortigao, J. A. R.
see Shi, Jingsheng, 562
- Ortiz, I.
see Ibáñez, R., 380
- Orzech, Mark D.
see Kobayashi, Nobuhisa, 1335
- Osinubi, Kolawole J.
Influence of Compactive Efforts and Compaction Delays on Lime-Treated Soil, 1214
Permeability of Lime-Treated Lateritic Soil, 1256
- Ospina, Carlos E.
Transmission of Interior Concrete Column Loads through Floors, 1091
- Ostfeld, Avi
see Kessler, Avner, 1301
- Osuch-Pajdzińska, E.
Models of Storm Sewers Discharge: 1. Description, 445
Models of Storm Sewers Discharge: 2. Calibration and Verification, 446
- O'Sullivan, David P.
Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake, 1013
see Hajjar, Jerome F., 1014
- Ou, Chang-Yu
Performance of Diaphragm Wall Constructed Using the Top-Down Method, 599
- Ouarda, Taha B. M. J.
see Ashkar, Fahim, 796
- Ouarda, Taha B.M.J.
Effect of Trimming on LP III Flood Quantile Estimates, 795
- Outlaw, James E., Jr.
see Camp, Charles V., 1302
- Ouyang, Chengsheng
see Shao, Yixin, 332
- Ouyang, Leslie
Hovering Over the Harbor, 1452
- Ovcharovichova, Janka, P.E.
Drainage Culvert Installation by Jacking and Boring, 1398
- Overy, R. F.
see Jardine, R. J., 541
- Owen, Frank
see LeBlond, David, 174
- Ownjazayeri, Vahid, P.E.
Rebuilding History, 1510
- Oxer, J. Paul, P.E.
Into the 21st Century: A Great Time to Be a Civil Engineer, 919
- Ozekin, Kenan
Evaluating Molecular Ozone and Radical Pathways of Bromate Formation During Ozonation, 425
- Özkan-Haller, H. Tuba
see Chawla, Arun, 1345
- Pacheco-Ceballos, Raul
Calculation of Channel and River Velocities, 750
- Packer, J. A.
see Cao, J. J., 1110
- Padival, Navnit, P.E.
Techniques for Administrative Creativity in Local Government, 895
- Pagano, L.
Interpreting Settlement Profiles of Earth Dams, 611
- Pajari, Matti
Shear Resistance of PHC Slabs Supported on Beams. I: Tests, 1140
Shear Resistance of PHC Slabs Supported on Beams. II: Analysis, 1141
- Pal, Raktim
Investigation on Latent Factors Affecting Route Divergence Intentions, 1242
- Palazotto, Anthony N.
see Greer, James M., Jr., 250
see Raouf, Raouf A., 20
- Palermo, Michael R., P.E.
see Mohan, Ram K., P.E., 1534
- Paludi, Fernando E., P.E.
see Brackbill, Craig E., P.E., 918
- Pan, Jill Ruhsing
see Chung, Ying-Chien, 415
- Pan, Youguang
Effect of Panel Stiffness on Resistance of Cladding Panels to Blast Loading, 258
- Panchang, Vijay G.
see Richardson, John E., 708
- Panda, S. N.
see Chatterjee, C., 863
- Pandey, Ganesh R.
Assessment of Scaling Behavior of Regional Floods, 811
- Pandey, S. N.
see Rastogi, A. K., 798

Pandolfi, Anna

Bounding Surface Models Applied to Fatigue of Plain Concrete, 276

Pang, Bingdong

River Flood Flow and Its Energy Loss, 674

Pantazopoulou, S. J.

Detailing for Reinforcement Stability in RC Members, 1093

see Martín-Pérez, B., 1094

Pantelides, Chris P.

Design of Trusses under Uncertain Loads Using Convex Models, 1060

see Gergely, Ioan, 135

Pantelides, Chris P., P.E.

Shake, Rattle and Hold (Available in Structural Engineering Special Issue Only), 1539

Panzeri, P.

see Castellani, A., 284

Pao, Yih-Hsing

see Howard, Samuel M., 315

Paola, Chris

see Parker, Gary, 761

see Parker, Gary, 762

Papagiannakis, A. T., ed.

Application of Geotechnical Principles in Pavement Engineering, 1544

Parcon, Diana

see Campbell, Kathleen, P.E., 1381

Parfitt, M. Kevin

see McIntyre, Charles, 52

Paris, Jean

see Banu, Dorina, 963

Park, B. K.

see Little, R. R., 209

Park, Junbom

Laboratory Study of Soil Flushing by Aqueous Solutions, 617

Park, Richard A.

see Jin, Kang-Ren, 1284

Park, Sun Woo

Analysis of a Layered Viscoelastic System with Transient Temperatures, 233

Park, Yon Dong

see Kim, Jin Keun, 982

Parker, Gary

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. I: Theory, 761

Alluvial Fans Formed by Channelized Fluvial and Sheet Flow. II: Application, 762

Parker, Philip J.

Alum Residual Floc Interactions with an Advancing Ice/Water Interface, 403

Parkhill, Kenneth L.

see Gulliver, John S., 726

see Hibbs, David E., 465

Parr, A.

Effects of Infiltration on Agricultural Runoff Contamination, 478

Parsons, I. D.

see Hjelmstad, K. D., 842

Pate, Henry, P.E.

see Wasserman, Edward P., P.E., 1446

Patel, V. C.

see Constantinescu, G. S., 661

Patnaik, Rabindranath

see Logan, Bruce E., 496

Patten, W. N.

A Primer on Design of Semiactive Vibration Absorbers (SAVA), 212

Pattnaik, S. B.

Urban Bus Transit Route Network Design Using Genetic Algorithm, 1243

Paul, Cynthia J.

see Puls, Robert W., 439

Paulsen, Gene W.

see Reid, John D., 1201

Paulson, Boyd C.

see Kang, Leen S., 185

Pavlostathis, Spyros G.

see Collins, Anthony G., 452

Pearlman, Seth

Jet Grouting: New Directions, 1484

Pedersen, Caroline

see Hinze, Jimmie, 147

Peek, Ralf

see El-Bkaily, Marwan, 288

Pei, Jin-Song

see Lok, Tat-Seng, 962

Peirce, J. Jeffrey

see Yum, Kyu-Jin, 396

Pekarun, Osman O.

Significance of Defects in Annular Well Seals, 1368

Peköz, T.

see Schafer, B. W., 1151

Pelinovsky, Efim

see Kit, Eliezer, 1339

Pellegrino, S.

see Lai, C.-Y., 26

Peña-Mora, Feniosky

Computer-Supported Collaborative Negotiation Methodology, 97

Pendharkar, Suhasini

see Roberts, Deborah J., 453

Peng, B.-F.

Closed-Form Solutions for the Response of Linear Systems to Nonstationary Earthquake Excitation, 291

Peng, Chun-Hsiang

see Chen, Jian-Shiuh, 984

AUTHOR INDEX

Polley

- Pennoni, C. R.**
Managing Your Career in an Era of Change, 1019
- Perdek, Joyce M.**
see Field, Richard, 1299
- Peri, M.**
see Levy, C., 232
- Perraton, D.**
see Chaallal, O., 126
- Perumal, Muthiah**
Variable-Parameter Stage-Hydrograph Routing Method. Part I: Theory, 804
Variable-Parameter Stage-Hydrograph Routing Method. Part II: Evaluation, 805
- Peterka, Jon A.**
Design Gust Wind Speeds in the United States, 1048
- Peters, David A., P.E.**
see Ownjazayeri, Vahid, P.E., 1510
- Peters, Tom F.**
How Creative Engineers Think, 1430
- Petersen, James N.**
see Schmieman, Eric A., 424
- Peterson, Kris T.**
see Rollins, Kyle M., 570
- Petrenko, A. A.**
Shape and Initial Dilution of Sand Island, Hawaii Sewage Plume, 713
- Peyrot, A. H.**
see Dagher, H. J., 1130
- Pezeshk, Shahram**
see Camp, Charles, 1086
- Pezzoli, P.**
see Castellani, A., 284
- Phan, Long, P.E.**
Tornado Aftermath: Questioning the Tools (Available Structural Engineering Special Issue Only), 1538
- Phan, Long T.**
Review of Mechanical Properties of HSC at Elevated Temperature, 959
- Philip, Ligy**
Cr(VI) Reduction by *Bacillus coagulans* Isolated from Contaminated Soils, 514
- Philippacopoulos, A. J.**
Spectral Green's Dyadic for Point Sources in Poroelectric Media, 207
- Pi, Yong-Lin**
Lateral Buckling Strengths of Cold-Formed Channel Section Beams, 1152
Out-of-Plane Inelastic Buckling and Strength of Steel Arches, 1044
- Pichtel, John**
see Steel, Mark C., 450
- Pickle, Randy, P.E.**
Rapid Redecking, 1445
- Pico, Odell**
see Mirmiran, Amir, 136
- Pietroforte, Roberto**
Civil Engineering Education Through Case Studies of Failures, 994
- Piles, Dean**
Solid Footing (available in Geoenvironmental Special Issue only), 1469
- Pilling, P.**
see Ashour, M., 554
- Piluso, Vincenzo**
see Faella, Ciro, 1108
- Pionke, Christopher D.**
see Mauldon, Matthew, 256
- Piper, Steven**
Benefits from Including Wetland Component in Water Supply Projects, 1305
- Pisani, Marco Andrea**
see Mancini, Giuseppe, 71
- Pitt, Jerome L.**
Predicting Aqueous Metal Species in a Stream Impacted by Mining Activity, 1385
- Piver, Warren T.**
Evaluating Health Risks From Ground-Water Contaminants, 429
- Platt, Jonathan**
see Piper, Steven, 1305
- Platten, David A., P.E.**
State of the Arts, 1454
- Platz, Terrence O.**
see Dahl, Bernard, 1421
- Plaut, Raymond H.**
Deflections, Vibrations, and Stability of Pair of Leaning Arches, 299
When the Levee Inflates, 1411
- Plizari, Giovanni A.**
see Giuriani, Ezio, 1138
- Plos, Mario**
Nonlinear FE Analyses of RC Bridge Frame Corners, Based on Fracture Mechanics, 79
- Podsiadlik, D. H.**
see Kim, B. R., 507
- Poh, K. W.**
General Creep-Time Equation, 966
- Poh, T. Y.**
Effects of Construction of Diaphragm Wall Panels on Adjacent Ground: Field Trial, 594
- Pohland, Frederick G., P.E.**
see Al-Yousfi, A. Basel, P.E., 1363
- Polak, Maria Anna**
Modeling Tension in Reinforced Concrete Members Subjected to Bending and Axial Load, 1136
Thermal Analysis of Reinforced-Concrete Shells, 1036
- Polepeddi, Ramakrishna**
see Mohammadi, Jamshid, 1399
- Polley, Craig**
Potential Challenges for Using Waste Glass in Portland Cement Concrete, 978

Pollock, David G.

see Bracci, Joseph M., 3

Polprasert, C.

Design Model for COD Removal in Constructed Wetlands Based on Biofilm Activity, 475

Polycarpou, Marios M.

see Boccelli, Dominic L., 1292

Polyzois, D.

see Hassan, Sherif K., 1041

Polyzois, Dimos

Lateral-Torsional Stability of Steel Web-Tapered I-Beams, 1155

Pompei, A.

Dynamics of Rigid Block Due to Horizontal Ground Motion, 294

Ponniah, J.

see El Hussein, H. M., 986

Pons, J. C.

see Djouadi, S., 21

Popov, Egor P.

see Balan, Toader A., 1057

Popov, V.

BEM Solution for Design of Trenches in Multilayered Landfills, 382

Popovics, J. S.

One-Sided Stress Wave Velocity Measurement in Concrete, 369

Popovics, John S.

see Subramaniam, Kolluru V., 358

Poston, Randall W.

Cable Stay Conundrum, 1488

Poulos, H. G.

see Loganathan, N., 604

Poulsen, Tjalfé G.

Gas Permeability and Diffusivity in Undisturbed Soil: SVE Implications, 492

VOC Vapor Sorption in Soil; Soil Type Dependent Model and Implications for Vapor Extraction, 391

Power, H.

see Popov, V., 382

Powers, William F., III

see Briaud, Jean-Louis, 535

Pradel, Daniel

Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, 560

Pradiwarter, H. J.

see Herrmann, T., 287

Prantil, V. C.

see Boedo, S., 292

Prasad, Rama

see Ram, Katakam V. Seetha, 724

Premasiri, Sundarlingam

see Isaacson, Michael, 1337

Preston, David

see Marlowe, Mark, 1367

Price, Thomas E.

Effects of Spatially Varying Ground Motions on Short Bridges, 1128

Priestley, M. J. Nigel

see Ricles, James M., 1070

Prietto, Pedro D. M.

see Consoli, Nilo C., 639

Prinos, P.

see Sofialidis, D., 678

Proni, John R.

see Huang, Hening, 658

Protopapas, Angelos

see Chao, Keh-Ping, 501

Protopapas, Angelos L.

Two Applications of Flow in Porous Media with Threshold Gradient, 801

Pruszk, Zbigniew

Variability of Multibar Profiles in Terms of Random Sine Functions, 1329

Pu, Jun-Ping

Time-Delay Compensation in Active Control of Structures, 330

Puja, Igusti W.

see Hanson, Mark T., 274

see Hanson, Mark T., 275

Puls, Robert W.

Discrete-Level Ground Water Monitoring System for Containment and Remedial Performance Assessment Objectives, 439

Pun, K. L.

see Davidson, M. J., 782

Puñal, A.

Multi-Fed Upflow Anaerobic Filter: Development and Features, 517

Pursula, Matti

see Kikuchi, Shinya, 1194

Put, B. M.

see Pi, Yong-Lin, 1152

Qi, Kai

see Sato, Tadanobu, 355

Qi, Shaoying

New Isotherm Equation for Water Vapor Adsorption onto Microporous Activated Carbon, 510

Qiao, Fengxiang

see Yang, Hai, 1261

Quach, Tung

see Carter, Donald, 89

Quan, Kevin C. N.

see Lee, Fook-Hou, 558

Qunneville, J. H. P.

see Ellis, J. S., 1047

Quick, Michael C.

see Millar, Robert G., 763

Rabideau, A. J.

see Ganguly, C., 407

AUTHOR INDEX

Ravikumar

- see* Ganguly, C., 512
- Rabideau, Alan**
Boundary Conditions for Modeling Transport in Vertical Barriers, 511
Nonequilibrium Sorption in Soil/Bentonite Barriers, 411
- Raftoyiannis, Ioannis G.**
see Polyzois, Dimos, 1155
- Raghunathan, S.**
see Curran, R., 201
- Raghuwanshi, N. S.**
Converting from Pan Evaporation to Evapotranspiration, 888
- Rahal, Mohammed A.**
Analysis of Settlement and Pore Pressure Induced by Cyclic Loading of a Silo, 638
- Rahardjo, H.**
see Yang, D. Q., 367
- Rahman, M. H.**
see Ahmed, I., 1005
- Rajapakse, R. K. N. D.**
see Zhou, Y., 339
- Rajaratnam, N.**
Water Distribution in Very High Velocity Water Jets in Air, 725
see Aderibigbe, O., 766
see Ead, Samir Ali, 778
see Moawad, Ahmed K., 381
see Moawad, Ahmed K., 701
- Rajaratnam, Nallamuthu**
see Ahmed, Ferdous, 681
- Raju, Kittur G. Ranga**
see Perumal, Muthiah, 804
see Perumal, Muthiah, 805
- Ram, Katakam V. Seetha**
Spatial B-Jump at Sudden Channel Enlargements with Abrupt Drop, 724
- Ramadan, J.**
see Ramsamooj, D. V., P.E., 1254
- Ramadhan., Rezqallah H.**
Evaluation of Arabian Asphalt Bender for Low-Temperature Cracking, 954
- Ramakrishna, V. G. S. T.**
see Rao, S. Narasimha, 577
- Ramakrishnan, Seetharaman**
see Harmon, Thomas G., 363
- Ramanujam, Ram, P.E.**
see Collins, Patti, 1530
- Ramanujam, T. K.**
see Vijayaraghavan, K., 481
- Ramcharan, Harri**
Obstacles and Opportunities in International Engineering Services, 936
- Ramesh, G.**
Effect of Transition Aone on Elastic Stresses in Concrete Materials, 987
- Ramsamooj, D. V., P.E.**
Model Prediction of Rutting in Asphalt Concrete, 1254
- Rankl, James G.**
see Grabow, Garry L., 816
- Rao, K. S. Nanjunda**
see Chandrashekhara, K., 16
- Rao, M. Babu**
see Rao, S. Narasimha, 577
- Rao, N. S. V. Kameswara**
see Rao, R. Venugopala, 602
- Rao, P. Rama Mohan**
see Venkataraman, P., 746
- Rao, P. S. C.**
see Annable, Michael D., 431
- Rao, R. Venugopala**
Time-Domain Analysis of Flexible Foundations Using Lanczos Vectors, 602
- Rao, S. Narasimha**
Influence of Rigidity on Laterally Loaded Pile Groups in Marine Clay, 577
- Rao, Sudhakar M.**
Physico-Chemical Behavior of Dry Silty Clays, 568
- Rao, V. Trinadha**
Modeling Conflicts of Heterogeneous Traffic at Urban Uncontrolled Intersections, 1197
- Raouf, Raouf A.**
Dynamic Instability of Tires Under Asymmetric Loads, 20
- Rasdorf, William**
see Lakmazaheri, Sivand, 92
- Raslan, Y.**
see Julien, P. Y., 773
- Rasmussen, K. J. R.**
see Young, B., 1039
see Young, B., 1040
- Rasmussen, Kim J. R.**
see Hasham, Anthony S., 1063
- Rastogi, A. K.**
Modeling of Artificial Recharge Basins of Different Shapes and the Effect on the Underlying Aquifer System, 798
- Rathje, Ellen M.**
Simplified Frequency Content Estimates of Earthquake Ground Motions, 539
see Bray, Jonathan D., 548
- Raubenheimer, B.**
Estimating Wave Heights from Pressure Measured in Sand Bed, 1341
- Rauch, Christian H.**
see Boufadel, Michel C., 819
- Ravens, Thomas M.**
Hydrodynamic Forcing and Sediment Character in Boston Harbor, 1327
- Ravikumar, V.**
Optimal Operation of South Indian Irrigation Systems, 1309

- Rayor, Gary, P.E.**
see Strasky, Jiri, P.E., 1436
- Razvi, Salim R.**
see Saatcioglu, Murat, 1175
- Reaveley, Lawrence D.**
see Gergely, Ioan, 135
- Reaveley, Lawrence D., P.E.**
see Pantelides, Chris P., P.E., 1539
- Reckhow, David A.**
see Bose, Purnendu, 471
- Recupero, Antonino**
see Mancini, Giuseppe, 71
- Redana, I. W.**
see Indraratna, B., 542
- Reddi, Lakshmi N.**
Bench-Scale Investigation on Vibrorecovery of NAPL Ganglia from Sands, 483
Filtration and Drainage in Geotechnical/Geoenvironmental Engineering, 1566
Mass Loss from LNAPL Pools under Fluctuating Water Table Conditions, 515
- Reddy, Krishna R.**
System Effects on Benzene Removal from Saturated Soils and Ground Water Using Air Sparging, 408
- Reddy, P. Mohan Rami**
see Rao, Sudhakar M., 568
- Redwood, Richard**
Castellated Beam Web Buckling in Shear, 1154
- Reed, Brian E.**
Oily Wastewater Treatment Pilot-Scale Results and Full-Scale Design, 1374
- Reed, Dorothy**
Investigation of Tuned Liquid Dampers under Large Amplitude Excitation, 257
- Reeve, D. E.**
Coastal Flood Risk Assessment, 1348
- Rege, Mahesh A.**
see Schmieman, Eric A., 424
- Reid, John D.**
Critical Impact Point for Longitudinal Barriers, 1202
Design and Simulation of Large Breakaway Signs, 1201
- Reid, M. D.**
Effects of Joint Geometry on Response of Asphaltic Plug Joints, 1236
- Rein, Martin**
Turbulent Open-Channel Flows: Drop-Generation and Self-Aeration, 656
- Reinauer, Roger**
Supercritical Flow in Chute Contraction, 647
- Reindl, Douglas T., P.E.**
see Bahnfleth, William P., P.E., 38
- Rengaraju, V. R.**
see Rao, V. Trinadha, 1197
- Rens, Kevin L., P.E.**
Recent Trends in Nondestructive Inspections in State Highway Agencies, 1000
- Retherford, Nick**
Project Delivery and the U.S. Dept. of State, 947
- Rettner, David, P.E.**
see Bischoff, Deb, 1525
- Revilla, José**
see Sanchez, Luis, 699
- Rezgui, Yacine**
Information Management in a Collaborative Multiactor Environment: The COMMIT Approach, 103
- Rhodes, David G.**
Gradually Varied Flow Solutions in Newton-Raphson Form, 881
- Rice, C. E.**
Roughness of Loose Rock Riprap on Steep Slopes, 667
- Richardson, John E.**
Three-Dimensional Simulation of Scour-Inducing Flow at Bridge Piers, 708
- Richardson, W. Roy**
Secondary Currents Around Braid Bar in Brahmaputra River, Bangladesh, 686
- Ricketson, Ralph**
see Satalich, Jay, 1183
- Ricles, James M.**
Modeling Nonductile R/C Columns for Seismic Analysis of Bridges, 1070
- Riess, I. R.**
Recirculating Flow Generated by Line-Source Bubble Plumes, 754
- Rigas, Fotis**
Shortcut Estimation of Safety Distances of Pipelines from Explosives, 1221
- Righetto, A. M.**
see Yu, Li-Ren, 399
- Rikers, R. A.**
Cr-Polluted Soil Studied by High Gradient Magnetic Separation and Electron Probe, 513
- Rilett, L. R., P.E.**
Effect of Variability on End Product Specifications, 156
Identifying Component Variability of End Product Specification Tests, 155
- Rilett, Laurence R., P.E.**
see Benedek, Christine M., 1196
- Riley, J. Paul**
see Grenney, William J., 876
- Rishindran, T.**
see Thevanayagam, S., 557
- Ritchie, Stephen G., ed.**
see Hendrickson, Chris T., ed., 1545
- Ritter, William F.**
see Dukes, Michael D., 516

AUTHOR INDEX

Rosignoli

- Ritterling, Jon M., P.E.**
Alternative Use of Multimed Model for Subtitle D
Landfill Applications, 1386
- Rizzano, Gianvittorio**
see Faella, Ciro, 1108
- Rizzo, Jack**
Design-Build Alternative: A Contract Method, 944
- Roark, Gary**
see Reed, Brian E., 1374
- Robakiewicz, Wojciech**
see Sawicki, Andrzej, 1347
- Robar, Tracy Y., P.E.**
Communication and Career Advancement, 910
- Roberts, Deborah J.**
Effects of TNT and Its Metabolites on Anaerobic TNT
Degradation, 453
- Roberts, James E.**
Shake It Up (Available in Structural Engineering Special
Issue Only), 1492
- Roberts, Jesse**
Effects of Particle Size and Bulk Density on Erosion of
Quartz Particles, 790
- Roberts, T. M.**
Strength of Webs Subjected to Compressive Edge
Loading, 9
- Robertson, Leon S.**
see Short, David, 1259
- Robinson, A. R.**
see Lee, In-Won, 279
- Robinson, Clinton O., P.E.**
see Davis, Stephen Keith, P.E., 1485
- Robinson, K. M.**
see Rice, C. E., 667
- Robinson, Ridgley K.**
see Hansen, William J., 1362
- Robson, Bradley N., P.E.**
Pullback Testing of Seismically Isolated P/C I-Girder
Bridge, 1126
- Roca, P.**
see Cruz, P. J. S., 1056
- Roca, Pere**
see Molins, Climent, 1096
- Rodegerdts, Lee A.**
see Leonard, John D., II, 1260
- Rodenbeck, Sven E., P.E.**
Groundwater Modeling and GIS to Determine Exposure
to TCE at Tucson, 1366
- Rodrigues, António Carmona**
see Câmara, António S., 830
- Rodríguez-Ferran, Antonio**
Comparing Two Algorithms to Add Large Strains to
Small-Strain FE Code, 321
- Rodríguez-Mirasol, José**
see Koussis, Antonis D., 684
- Roesner, Larry A.**
Corporate University: Consulting Firm Case Study,
917
- Roesset, Jose M.**
see Kim, Seong-Min, 329
see Kim, Seong-Min, 1209
- Rogers, Colin A.**
Bolted Connection Tests of Thin G550 and G300 Sheet
Steels, 1112
- Rogers, David C.**
Canal Control Algorithms Currently in Use, 851
see Malaterre, Pierre-Olivier, 850
- Rogers, Jerry R., ed.**
Engineering History and Heritage, 1563
- Rogers, W. Erick**
see Work, Paul A., 1186
see Work, Paul A., 1349
- Rollings, Marian P.**
see Rollings, Raymond S., 989
- Rollings, Raymond S.**
Investigation of Joint Spalling on a Concrete Runway,
989
Joint Spalling in Newly Constructed Concrete Pavements,
1004
see Kuo, Chun-Yi, 969
- Rollins, Kyle M.**
Lateral Load Behavior of Full-Scale Pile Group in
Clay, 570
Optimum Moisture Content for Dynamic Compaction
of Collapsible Soils, 589
Shear Modulus and Damping Relationships for Gravels,
563
- Romo-Kröger, Carlos M.**
Does Filtration Efficiency Affect Measurements of Particle
Chemical Composition?, 454
- Romstad, K. M.**
see Chai, Y. H., 1124
- Rong, Yue**
see Duke, L. Donald, P.E., 423
- Rood, Mark J.**
see Qi, Shaoying, 510
- Rooney, Florence**
Alaska's Last Link, 1536
- Rose, T. A.**
see Mays, G. C., 1089
- Rosenau, Philip**
see Slepian, Leonid, 324
- Rosenfeld, Y.**
Methodology for Prioritizing Cost-Effective Construction
Technologies, 161
- Rosignoli, M.**
Misplacement of Launching Bearings in PC Launched
Bridges, 75
- Rosignoli, Marco**
Launched Bridges, 1581
Nose-Deck Interaction in Launched Prestressed Concrete
Bridges, 59

- Rosowsky, D. V.**
see Kothekar, A. V., 993
- Rosowsky, David**
see Ellingwood, Bruce, 10
- Rosowsky, David V.**
see Stewart, Mark G., 845
- Ross, Randall R.**
 Evaluation of Containment Systems Using Hydraulic Head Data, 443
- Ross, Todd E.**
see Rollins, Kyle M., 589
- Rossi, Giuseppe**
see Cancelliere, Antonino, 808
- Rossikhin, Yuriy A.**
 Application of Fractional Calculus for Analysis of Nonlinear Damped Vibrations of Suspension Bridges, 331
- Rossman, Lewis A.**
see Boccelli, Dominic L., 1292
- Rosson, Barry T.**
see Boothby, Thomas E., 36
- Rostásy, Ferdinand S.**
 Draft Guidelines for the Acceptance Testing of FRP Posttensioning Tendons, 114
- Rots, Jan G.**
see Lourenço, Paulo B., 1095
- Rotter, J. M.**
see Chen, J. F., 1142
- Roussos, Yiannis**
see Makris, Nicos, 353
- Rowings, James E.**
see Harmelink, David J., 171
- see* Sonmez, Rifat, 198
- Rowland, Michael G.**
see Fox, Patrick J., 612
- Rowles, Lisa D.**
see Foote, Gary R., 441
- Roy, Paul A., P.E.**
 Tough Conditions, Innovative Solutions, 1438
- Różyński, Grzegorz**
see Pruszk, Zbigniew, 1329
- Rubin, Robert A.**
 Risky Business, 943
- Ruiz C., V.**
see Burt, C. M., 857
- Ruiz-Carmona, V. M.**
 Canal Control Algorithms Formulations, 854
- Rumer, Ralph R.**
see Atkinson, Joseph F., 419
- Russell, J. C.**
 Experimental Determination of Frequencies and Tension for Elastic Cables, 336
- Russell, Jeffrey S.**
see Flack, David A., 897
- Russell, Jeffrey S., P.E.**
 Challenges and Opportunities in Construction: A Construction Congress V Summary, 1402
 Seminar Review: Applying Technology in Project Management and Product Design, 935
 A Summary of Construction Congress V, 940
- Ruth, Bryan C.**
see Abt, Steven R., 893
- Rüther, H.**
see Merry, C. L., 1191
- Ryu, Chung-Son**
see Isaacson, Michael, 225
- Saad, Ihab Mohammad Hamdi**
 Multimedia for Construction Project Management: Project Navigator, 149
- Saadatmanesh, H.**
 Design Guidelines for Flexural Strengthening of RC Beams with FRP Plates, 134
- Saari, Robert B.**
 Effect of Sodium Xylenesulfonate on Zinc Removal from Wastewater, 487
- Saatcioglu, Murat**
 High-Strength Concrete Columns with Square Sections under Concentric Compression, 1175
- Sabatini, David A., P.E.**
see Knox, Robert C., P.E., 1022
- Sadaoui, Z.**
 Surfactants for Separation Processes: Enhanced Ultrafiltration, 458
- Sadek, Fahim**
 Semiactive Control Algorithms for Structures with Variable Dampers, 326
- Sadek, Shafik E.**
 Flux Chamber Measurements of Mass Transfer Rates, 387
- Saeki, Eiichiro**
 Mechanical Properties of Low-Yield Point Steels, 970
- Saetta, Anna**
 Mechanical Behavior of Concrete under Physical-Chemical Attacks, 340
- Safferman, Steven I.**
 Deicing Fluid Treatment in Batch-Loaded Aerobic Fluidized Bed Reactor, 375
- Saidi, M.**
 Bridge Prestress Losses in Dry Climate, 69
- Saito, Mitsuru, P.E.**
see Isaacs, Beatrice, 846
- Saka, Anthony A., P.E.**
 Effect of Dynamic Sight-Distance Problem on Unprotected Left-Turn Movement Capacity, 1224
- Sakurai, S.**
see Nakayama, A., 546
- Salari, M. Reza**
 Nonlinear Analysis of Composite Beams with Deformable Shear Connectors, 1148
- Salazar, Guillermo F.**
see Albano, Leonard D., P.E., 1021

AUTHOR INDEX

Schaefer

- Saleh, A. L.
Crack Growth Analysis in Reinforced Concrete Using BEM, 322
- Saleh, Bassam
see Mohsen, Mousa S., 1253
- Saleh, K. R.
see Grace, N. F., 137
- Salgado, R.
Calibration Chamber Size Effects on Penetration Resistance In Sand, 607
see Yu, H. S., 523
- Samaan, Michel
Model of Concrete Confined by Fiber Composites, 1137
see Mirmiran, Amir, 136
- Samara, Mufid F.
Nonstructural Considerations in Design of Blast-Resistant Buildings, 1403
- Samdahl, Donald, ed.
see Easa, Said, ed., 1602
- Samsonek, J.
Influence of Specimen Size on Leachability Test Results of Waste ST/SO, 1383
see Vondruska, M., 1384
- Sanchez, Luis
Use of Neural Networks in Design of Coastal Sewage Systems, 699
- Sanchez, Thomas W.
Equity Analysis of Capital Improvement Plans Using GIS: Des Moines Urbanized Area, 1273
- Sanders, Brett F.
Spectral Modeling of Nonlinear Dispersive Waves, 641
see Katopodes, Nikolaos D., 1350
- Sanders, Steve R.
see Thompson, Paul J., 939
- Sandford, T. C., P.E.
see Tweedie, J. J., 624
- Sanfilippo, Franck
see Deltour, Jean-Luc, 856
- Sanfilippo, Matthew A.
see Bucknam, Mark D., P.E., 1522
- Sanford, William E.
Site Characterization and Containment Assessment with Dissolved Gases, 442
- Sansalone, John J.
Partitioning and First Flush of Metals in Urban Roadway Storm Water, 15
Physical Characteristics of Urban Roadway Solids Transported During Rain, 422
- Santamarina, J. Carlos
Introduction to Discrete Signals and Inverse Problems in Civil Engineering, 1579
- Sanvido, Victor
see Konchar, Mark, 190
- Saounatsos, Yorgo E.
Technology Readiness and Development Risks of New Supersonic Transport, 29
- Saraf, Vijay
Proofload Testing of Deteriorated Steel Girder Bridges, 66
- Saraf, Vijay K.
Evaluation of Existing RC Slab Bridges, 990
- Sarbjeet, S.
Open-Closed Loop Linear Control of Building Frames under Seismic Excitation, 1029
- Sarma, Kamal C.
Cost Optimization of Concrete Structures, 1088
- Sarraf, Majid
Ductile Seismic Retrofit of Steel Deck-Truss Bridges. I: Strategy and Modeling, 1159
Ductile Seismic Retrofit of Steel Deck-Truss Bridges. II: Design Applications, 1160
- Sasikumar, K.
Fuzzy Optimization Model for Water Quality Management of River System, 1290
- Satalich, Jay
Field Test of Trimble 400 Real-Time Kinematic GPS Survey System, 1183
- Sato, Tadanobu
Adaptive H_∞ Filter: Its Application to Structural Identification, 355
- Saunders, William L.
see Wu, Jy S., 444
- Savarad, Marc
see Fafard, Mario, 60
- Savenije, Hubert H. G.
Analytical Expression for Tidal Damping in Alluvial Estuaries, 719
- Savin, D.
Calculating Weight Matrix of Neural Network for Resource Leveling, 112
- Savoia, M.
see Capuani, D., 285
- Sawhney, Anil
see Abudayyeh, Osama, P.E., 70
- Sawicki, Andrzej
New Type of Bottom Protection in Harbors—Design Method, 1347
- Sawyer, Charles S.
Mixed-Integer Chance-Constrained Models for Ground-Water Remediation, 1312
- Sayed, Tarek
Comparison of Fuzzy and Neural Classifiers for Road Accidents Analysis, 95
- Scalia, A.
see Pompei, A., 294
- Scanlan, Robert H.
Bridge Flutter Derivatives at Vortex Lock-In, 1074
- Scarlato, P. D.
see Tisdale, T. S., 689
- Schaefer, J. A.
see Ettema, R., 88

- Schafer, B. W.**
Cold-Formed Steel Members with Multiple Longitudinal Intermediate Stiffeners, 1151
- Scheffner, Norman W.**
see Edge, Billy L., 720
- Scheithe, John R.**
see Fox, Patrick J., 612
- Schexnayder, Cliff**
see Flora, Gwen, 1405
see Ohrn, L. Greg, 142
- Schiff, Anshel J.**
Guide to Post-Earthquake Investigation of Lifelines, 1572
- Schjønning, Per**
see Poulsen, Tjalfe G., 492
- Schlaff, Thomas G.**
see Everett, John G., 164
- Schmidt, Lewis C.**
Posttensioned and Shaped Hexagonal Grid Dome: Test and Analysis, 1101
- Schmiedlin, Robert, P.E.**
see Bischoff, Deb, 1525
- Schmieman, Eric A.**
Comparative Kinetics of Bacterial Reduction of Chromium, 424
- Schnaid, Fernando**
see Consoli, Nilo C., 605
- Schneider, Stephen P.**
Axially Loaded Concrete-Filled Steel Tubes, 1146
Flexural Capacity of Pressurized Steel Pipe, 1061
Lateral Strength of Steel Frames with Masonry Infills Having Large Openings, 1122
Seismic Behavior of Steel Frames with Deformable Panel Zones, 1028
- Schnoor, Jerald L.**
see Burken, Joel G., 12
- Schonfeld, Paul, ed.**
see Mumayiz, Saleh A., ed., 1543
see Ting, Ching-Jung, 1346
- Schreck, M.**
Determination of Heat Production Zones at Open-Cast Mine Dump, 451
- Schreiber, Madeline E.**
see Moline, Gerilynn R., 436
- Schreifer, Jill A.**
see Piver, Warren T., 429
- Schulz, Mauro**
Generalized Warping Torsion Formulation, 249
- Schuur, P. C.**
see Krikke, H. R., 416
- Schuurmans, J.**
see Ruiz-Carmona, V. M., 854
- Schuurmans, Jan**
see Malaterre, Pierre-Olivier, 850
- Schuurmans, W.**
see Clemmens, A. J., 853
- Schwankl, L. J.**
see Hanson, B. R., 883
- Schwartz, C. W., ed.**
see Papagiannakis, A. T., ed., 1544
- Schweizer, John, P.E.**
see Duplancic, Neno, P.E., 1463
- Scotta, Roberto**
see Saetta, Anna, 340
- Scranton, Heather B., ed.**
see Bowders, John J., ed., 1569
see Daniel, David E., 584
- Sebaaly, Peter E.**
see Siddharthan, Raj V., 1265
- Sebök, T.**
see Vondruska, M., 1384
- Sebos, Ioannis**
see Rigas, Fotis, 1221
- Seck, Earl**
The Deep (Available in Geo-Environmental Special Issue only), 1517
- Seckin, Galip**
Contraction and Expansion Losses Through Bridge Constrictions, 710
- Seed, Raymond B.**
see Augello, Anthony J., 545
- Segal, D.**
see Warszawski, A., 11
- Selig, Ernest T.**
see Li, Dingqing, 555
see Li, Dingqing, 556
- Semmens, Michael J.**
see Weiss, Peter T., 715
- Sen, D. J.**
Efficient Solution Technique for Dendritic Channel Networks Using FEM, 745
- Şen, Zekai**
Average Areal Precipitation by Percentage Weighted Polygon Method, 799
- Senior, Bolivar A.**
Simplified Simulation System for Construction Projects, 148
- Sennah, Khaled**
Shear Distribution in Simply-Supported Curved Composite Cellular Bridges, 62
- Senum, G.**
see Sullivan, T. M., 430
- Seo, Dong-Jun**
see Anagnostou, Emmanouil N., 809
- Seo, Il Won**
Predicting Longitudinal Dispersion Coefficient in Natural Streams, 643
- Seraj, S. M.**
see Ahmed, I., 1005

AUTHOR INDEX

Shing

Sercombe, Jérôme

Viscous Hardening Plasticity for Concrete in High-Rate Dynamics, 334

Serzan, Kenneth, P.E.

see Khazem, Dyab, 1466

Seth, S. M.

see Goel, N. K., 663

Sexsmith, R. G.

see Steunenberg, M., 76

Sha, Wei

Fire Resistance of Floors Structures Constructed Using Fire-Resistant Steels, 1097

Shackelford, Charles D.

see Chiu, Te-Fu, 540

see Stern, Roslyn T., 547

Shafahi, Yousef

Simulation Model for Analyzing SPUDI with Actuated Signals, 1250

Shafique, Md. Sazzad Bin

Influence of Carbonation on Leaching of Cementitious Wasteforms, 426

Shah, D. O.

see Truesdail, S. E., 522

Shah, Surendra P.

see Choi, Sokhwan, 216

see Shao, Yixin, 332

see Subramaniam, Kolluru V., 358

see Weiss, W. Jason, 301

Shahawy, Mohsen

see Mirmiran, Amir, 136

see Samaan, Michel, 1137

Shahbahrani, Shahpor

see Abraham, Dulcy M., 187

Shahid, Sohban

see Peterka, Jon A., 1048

Shahwan, Khaled W.

Buckling of Unilaterally Constrained Infinite Plates, 221

Shang, Julie Q.

Pullout Resistance of High-Voltage Strengthened Ground Anchors, 603

Shani, Uri

Soil Hydraulic Models Selection Based on In-Situ Measurements, 889

Shankar, Nair R., P.E.

Building Between Buildings (Available in Structural Engineering Special Issue Only), 1540

Shao, Songdong

see Wang, Guangqian, 712

Shao, Yixin

Interface Behavior in Steel Fiber/Cement Composites under Tension, 332

Sharp, M. Keith

see Zhao, Yu, 346

Shash, Ali A.

Bidding Practices of Subcontractors in Colorado, 166

Subcontractors' Bidding Decisions, 151

Shaw, M. R.

see Millard, S. G., 976

Sheikh, Shamim A.

see Bayrak, Oguzhan, 1134

see Foster, Stephen J., 1174

Shemer, L.

Experiments on Nonlinear Wave Groups in Intermediate Water Depth, 1360

Shen, C. K.

see Li, X. S., 566

see Li, X. S., 578

Shen, Hayley

Onset of Transition for Cohesive and Viscous Granular Flows, 337

Shen, Hui-Shen

Large Deflection of Reissner-Mindlin Plates on Elastic Foundations, 338

Shen, J.

Application of Inverse Method to Calibrate Estuarine Eutrophication Model, 420

Shen, Liyin

Competitive Tendering Practice in Chinese Construction, 158

Shenk, Gary W.

see Culver, Teresa B., 1288

Shenton, Harry W., III

see Dinehart, David W., 1100

Shepherd, Anne

Drought Contingency Planning: Evaluating the Effectiveness of Plans, 1307

Sherbourne, Archibald N.

see Kabir, Mohammad Z., 300

Sheth, Jayant N., P.E.

Innovative Use of Slurry Walls at Dam Number 2 Hydropower Project, 574

Shi, Jingsheng

Modular Neural Networks for Predicting Settlements During Tunneling, 562

Shi, Yaoyu

see Easa, Said M., 1016

Shi, Z. Y.

see Law, S. S., 360

Shield, Carol K.

see Hajjar, Jerome F., 1120

Shifter, Mark

see Kulash, Robert, P.E., 1500

Shih, George

Variance of Load Estimates Derived by Piecewise Linear Interpolation, 508

Shim, Hyung-seop

see Hearn, George, 832

Shing, P. Benson

see Salari, M. Reza, 1148

Shinozuka, Masanobu

see Hwang, Howard H. M., 841

Shitikova, Marina V.

see Rossikhin, Yuriy A., 331

Shoemaker, Christine A.

see Mansfield, Christopher M., 1283

see Minsker, Barbara Spang, 1286

see Minsker, Barbara Spang, 1297

Shome, M. L.

Lateral Flow Exchange in Transient Compound Channel Flow, 650

Shome, Nilesh

see Bazzurro, Paolo, 1162

Short, David

Motor Vehicle Death Reductions from Guardrail Installation, 1259

Short, T. J.

see Abraham, Dulcy M., 187

Show, Kuan-Yeow

see Tay, Joo-Hwa, 461

Shrestha, Sharad Man

Evolution of Optimum Shapes Using Genetic Algorithm, 1167

Shrikhande, Manish

Synthesizing Ensembles of Spatially Correlated Accelerograms, 349

Shrivastava, Gyan S.

Impact of Sea Level Rise on Seawater Intrusion into Coastal Aquifer, 800

Shuo, Li

Parameter Back-Calculation For Concrete Pavement with Two Slab Layers, 1266

Shuster, Laurie A.

Small Firms, Big Advantages, 1515

Shvidchenko, A. B.

Hydraulic Modeling of Bed Load Transport in the Gravel-Bed Laba River, 739

Shyu, C. T.

see Ellis, J. S., 1047

Sicking, Dean L.

see Reid, John D., 1202

Siddharthan, Raj V.

Pavement Strain from Moving Dynamic 3D Load Distribution, 1265

Siddiqui, Mohamed

see Ozekin, Kenan, 425

Siegfried, Robert

see Monde, Michelle, P.E., 1475

Signell, Richard P.

see Ravens, Thomas M., 1327

Silliman, Stephen E.

Monitoring Hydraulic Gradient Using Three-Point Estimator, 434

Silva-Araya, Walter F.

Repair and Rehabilitation of Reinforced Concrete Structures: The State of the Art, 1589

Silyn-Roberts, Heather

Using Engineers' Characteristics to Improve Report Writing Instruction, 1015

Simiu, E.

see Heckert, N. A., 1073

Simiu, Emil, P.E.

see Phan, Long, P.E., 1538

Simmons, J. E. L.

see Gardiner, Paul D., 900

Simonovic, Slobodan P.

see Ilich, Nesa, 111

Šimunek, Jirka

see Gribb, Molly M., 601

Sinai, Gideon

see Kessler, Avner, 1301

Sinfield, Joseph V.

Tunnel Construction Costs for Tube Transportation Systems, 145

Singh, Amarjit

see Johnson, Holly M., 189

see Johnson, Holly M., 931

see Johnson, Holly M., 937

Singh, Dileep

see Wescott, James, 1361

Singh, H.

see Jones, J., 49

Singh, R.

see Chatterjee, C., 863

Singh, V. P.

Flood Peak Attenuation and Forecast, 793

Singhal, Ajay

Bayesian Updating of Fragilities with Application to RC Frames, 1125

Sinha, Amit K.

Application of Automatic Differentiation to Reservoir Design Models, 1298

Sinha, P. K.

see Chakravorty, Dipankar, 204

Sinha, Sanjiv K.

Three-Dimensional Numerical Model for Flow through Natural Rivers, 642

see Marelius, Frederick, 709

Sinha, Satchidanand

see Chitale, Srikrishna V., 659

Sinn, Robert

see Iyengar, Hal, 1429

Sirisak, Suphasit

Improved Procedures for Structural Integrity Evaluation of Bridges, 831

Siruvallure, Ganesh S.

see Safferman, Steven I., 175

Sisodia, Sunita

Modeling the Heat Sense Flowmeter, 871

Sitar, Nicholas

see Zornberg, Jorge G., 587

AUTHOR INDEX

Soufiani

- see* Zornberg, Jorge G., 588
- Sivaganesan, Mano**
see Clark, Robert M., 519
- Skibniewski, Mirosław J.**
see Chao, Li-Chung, 175
- Skoglund, Timothy W.**
see Parker, Gary, 762
- Skowron, Eric M.**
see Abt, Steven R., 893
- Skyner, D. J., Hon. F.**
 Wave Kinematics and Surface Parameters of Steep Waves Traveling on Sheared Currents, 1321
- Slade, Lee, P.E.**
 Downtown Goes Uptown in Stainless Steel, 1416
see Platten, David A., P.E., 1454
- Slater, Thomas S.**
 Partnering: Agreeing to Agree, 945
- Slaughter, E. Sarah**
 Models of Construction Innovation, 167
- Slaughter, Scott H., P.E.**
 Inspecting the Unknown (Available in Geo-Environmental Special Issue Only), 1518
- Sleath, John F. A.**
see Wijetunge, Janaka J., 1343
- Sleep, Brent E.**
 Estimation of Biokinetic Parameters for Unsaturated Soils, 490
- Slepyan, Leonid**
 Solitary Waves in Flexible, Arbitrary Elastic Helix, 324
- Slivka, Jeffery M.**
 Environmental Exposure, 1497
- Sloan, S. W.**
see Yu, H. S., 523
- Sloan, Scott W.**
see Ukritchon, Boonchai, 550
- Smith, Douglas, P.E.**
see Dahl, Bernard, 1421
- Smith, Edward H.**
 Surface Complexation Modeling of Metal Removal by Recycled Iron Sorbent, 484
- Smith, George Anthony**
see Groton, James P., 950
- Smith, J. Donald**
see Sadek, Shafik E., 387
- Smith, John W., ed.**
 After the Rain Has Fallen: Ground Water Management Symposium, 1541
- Smith, Nigel J.**
see Ng, S. Thomas, 109
- Smith, Robert L.**
 Comparison of Perception Versus Reality in Timber Bridge Performance, 981
- Smith, Robert W.**
see Shafique, Md. Sazzad Bin, 426
- Smith, Ronald**
 Using Small Holding Tanks to Reduce Pollution in Narrow Estuaries, 660
- Smith, Thomas W., III**
 Site Safety: Rights, Risks, and Responsibilities, 1455
- Smithson, Joseph A.**
see Sansalone, John J., 422
- Sodhi, Devinder**
see Carter, Donald, 89
- Sofialidis, D.**
 Compound Open-Channel Flow Modeling with Nonlinear Low-Reynolds $k-\epsilon$ Models, 678
- Sohal, Amrik S.**
see Mandal, Purnendu, 901
- Soliman, A. K.**
see Grace, N. F., 137
- Solo-Gabriele, Helena M.**
 Generation of Long-Term Record of Contaminant Transport, 448
- Solomon, D. Kip**
see Sanford, William E., 442
- Somboonsong, Win**
see Harris, Harry G., 117
- Song, T.**
 Effect of Bed-Load Movement on Flow Friction Factor, 665
- Song, W.**
see Popovics, J. S., 369
- Song, Weiguo**
see Shen, Liyin, 158
- Songer, Anthony, ed.**
see Wang, Kelvin C. P., ed., 1553
- Songer, Anthony D.**
see Molenaar, Keith R., 195
- Songonuga, Olu**
see Lafebre, Hilda, 1376
- Sonmez, Rifat**
 Construction Labor Productivity Modeling with Neural Networks, 198
- Soong, T. T.**
see Ge, L., 217
see Ge, L., 218
- Sorace, Stefano**
 Seismic Damage Assessment of Steel Frames, 1084
- Sotelino, E. D.**
see Ramesh, G., 987
- Sotir, Robbin B., P.E.**
 Soil Bioengineering Takes Root, 1474
- Sotiropoulos, Fotis**
see Sinha, Sanjiv K., 642
- Soudki, Khaled A.**
see Braimah, Abass, 133
- Soufiani, Ebrahim**
see Wormleaton, Peter R., 460

Souleyrette, Reginald R.

Developing Small Area Network Planning Models
Using Desktop GIS, 1275

Sousa, Inês

see Câmara, António S., 830

Soutsos, M. N.

see Millard, S. G., 976

Soydemir, Çetin, P.E.

see Davidson, William A., P.E., 1528

Sozen, Mete A.

The Oklahoma City Bombing: Structure and Mechanisms of the Murrah Building, 1003

see Corley, W. Gene, 1001

see Mlakar, Paul F., Sr., 1002

Spacone, Enrico

see Salari, M. Reza, 1148

Spadea, G.

Structural Behavior of Composite RC Beams with
Externally Bonded CFRP, 130

Spanos, P. D.

see Zeldin, B. Z., 296

Sparrevik, P.

see Colliat, J.-L., 1344

Spaulding, Malcolm L., ed.

Estuarine and Coastal Modeling, 1564

Speece, Richard E.

see Demirel, Göksel N., 413

Spillers, W. R.

see Levy, R., 1076

Springman, Sarah M.

see Ng, Charles W. W., 561

Sprong, Mary Palumbo

see Ahlfeld, David P., 1282

Sproule, William J., ed.

Automated People Movers VI: Creative Access for
Major Activity Centers, 1547

Srinivasan, Dipti

see Cheu, Rucy-Long, 1262

Stafford, T. E.

see Cousins, T. E., 991

Stainsby, Richard

see Chilton, Richard A., 707

Stakhiv, Eugene Z., ed.

see Haimes, Yacov Y., ed., 1591

Stallings, J. M.

see Cousins, T. E., 63

see Cousins, T. E., 991

Stander, Ed

see Carter, Donald, 89

Stanfill-McMillan, Kim

see Smith, Robert L., 981

Stanley, Algernon

see Burleson, Rebecca C., 196

Stansbury, John S.

see Ritterling, Jon M., P.E., 1386

see Saari, Robert B., 487

Stark, Timothy D.

Fourth Avenue Landslide During 1964 Alaskan Earthquake, 534

Performance of Three-Dimensional Slope Stability
Methods in Practice, 623

Slope Stability Analyses in Stiff Fissured Clays, 14

Starossek, Uwe

Complex Notation in Flutter Analysis, 1131

Starossek, Uwe, P.E.

Weight Versus Cost: Light-Weight Materials in Cable-
Stayed Bridges, 1170

Steel, Mark C.

Ex-Situ Remediation of a Metal-Contaminated Super-
fund Soil Using Selective Extractants, 450

Stefan, Heinz G.

see Mackenthun, Alan A., 400

Steffens, Charles

see Marlowe, Mark, 1367

Steffler, P. M.

see Shome, M. L., 650

Stein, Stuart M.

see Umbrell, Edward R., 676

Stelling, Guus S.

see Casulli, Vincenzo, 728

Stern, Roslyn T.

Permeation of Sand-Processed Clay Mixtures with Cal-
cium Chloride Solutions, 547

Sternberg, H.

see Merry, C. L., 1191

Steunenberg, M.

Seismic Behavior of Steel Pile to Precast Concrete Cap
Beam Connections, 76

Stewart, Mark G.

Structural Safety and Serviceability of Concrete Bridg-
es Subject to Corrosion, 845

Stewart, Mike P.

see Wang, Jinling, 1193

Stiemer, S. F.

see Steunenberg, M., 76

Stillman, J. B.

see Borden, R. C., 463

Stinson, Jeffrey

see Baldwin, Timothy D., 518

Stinson, Mary

see Field, Richard, 1299

Stiver, W. H.

see Harper, B., 500

Stokoe, Kenneth H., II

see Luke, Barbara A., 575

Stoner, James W.

see Bhatti, M. Asghar, 835

AUTHOR INDEX

Swanson

- Stopher, Peter R.**
see Wilmot, Chester G., 1198
- Stormont, J. C.**
 Air Flow as Monitoring Technique for Landfill Liners, 437
- Stormont, John C.**
 Method to Estimate Water Storage Capacity of Capillary Barriers, 553
- Stranel, O.**
see Samsonek, J., 1383
- Strasky, Jiri, P.E.**
 Positively Not Pedestrian, 1436
- Streiner, Carol F.**
see Corssmit, C. W., 1526
- Strelkoff, T. S.**
 Influence of Canal Geometry and Dynamics on Controllability, 852
- Strelkoff, Theodor S.**
 Nondimensional Expression of Unsteady Canal Flow, 858
- Streng, Andreas**
 Combined Wet/Dry Cooling Towers of Cell-Type Construction, 203
- Strobl, Robert O.**
see Cheng, Jing-Ru, 822
- Stromatt, Rebecca F.**
see Bracci, Joseph M., 3
- Structural Engineering Institute/American Society of Civil Engineers**
 Specifications for Structural Steel Beams with Web Openings, 1597
- Structural Engineering Institute of the ASCE, Technical Committee on Optimal Structural Design**
 Guide to Structural Optimization, 2
- Strzepek, Kenneth M.**
see Yates, David N., 803
- Sture, Stein**
 Mechanics of Granular Materials at Low Effective Stresses, 25
- Sturm, Terry W.**
see Biglari, Bahram, 664
- Su, S. F.**
 Base Stability of Deep Excavation in Anisotropic Soft Clay, 600
- Subbarao, Chillara**
see Ghosh, Ambarish, 472
- Subedi, N. K.**
 External Plate Reinforcement for Concrete Beams, 1180
- Subramaniam, Kolluru V.**
 Testing Concrete in Torsion: Instability Analysis and Experiments, 358
- Sugisawa, Mitsuru**
see Saeki, Eiichiro, 970
- Suidan, Makram T.**
see Boufadel, Michel C., 819
- Suita, Keiichiro**
 Tests of Welded Beam-to-Column Subassemblies. II: Detailed Behavior, 1158
- see* Nakashima, Masayoshi, 1157
- Sulekha**
 Two-Phase-Reactive Solute-Transport Simulation in Unsaturated Zone, 870
- Sulisz, Wojciech**
 Diffraction of Nonlinear Waves by Founded Horizontal Rectangular Cylinder, 1352
- Sullivan, Daniel**
see Field, Richard, 1299
- Sullivan, T. M.**
 Monitoring Subsurface Barrier Integrity Using Perfluorocarbon Tracers, 430
- Sum, Y. K.**
see Liew, K. M., 228
- Sumbatyan, M. A.**
see Pompei, A., 294
- Sumer, B. M.**
 Wave Scour Around Group of Vertical Piles, 1351
- Sun, Lu**
 Predicting Vertical Dynamic Loads Caused by Vehicle-Pavement Interaction, 1248
- Sun, Yung-Hsin**
 Location and Schedule Optimization of Soil Vapor Extraction System Design, 1287
- Sunde, J.**
see van Benthum, W. A. J., 402
- Suneja, B. P.**
 Open-Close Loop Active Control of Articulated Leg Platform, 297
- Surampalli, Rao Y.**
 Interaction of Metal and Other Contaminants Present in Sludge and Soil, 1380
- Surampalli, Rao Y., P.E.**
see Pitt, Jerome L., 1385
- Sutherland, James**
 Characteristics of Wave Reflection Spectra, 1358
 Wave Phase Shift at Coastal Structures, 1334
- Suzuki, Yasushi**
 Carriage Position Adjustment of Triangular Running Skyline System, 1067
- Swamee, Prabhata K.**
 Design of Pipelines to Transport Neutrally Buoyant Capsules, 780
 Discharge Equation for Rectangular Slots, 759
- Swamy, Narayan**
see Mukhopadhyaya, Phalguni, 123
- Swamy, R. N.**
see Spadea, G., 130
- Swan, Colby C.**
see Mijar, Anand R., 1085
- Swanson, Roy A.**
see Sture, Stein, 25

- Sweeney, Brian P., ed.
see Finno, Richard J., ed., 1558
- Sweeney, Neal J.
 Who Pays for Defective Design?, 949
- Sweriduk, Gregory D.
see Calise, Anthony J., 272
- Swofford, Jason L.
see Norville, H. Scott, 210
- Symons, James M.
see Park, Junbom, 617
- Synolakis, Costas Emmanuel
see Titov, Vasily V., 1342
- Tabatabai, Habib, P.E.
see Mehrabi, Armin B., P.E., 1165
- Tabatabai-Gargari, Mousa
 Integrated CAD/Knowledge-Based Approach for Automating Preconstruction Activities, 170
- Taboada-Urtuástegui, Víctor M.
 Centrifuge Modeling of Earthquake-Induced Lateral Spreading in Sand, 637
- Taha, Ramzi
 Evaluation of Coke Dust-Modified Asphalt Using Superpave, 974
- Taiganidis, Ioannis
 Aspects of Stopping-Sight Distance on Crest Vertical Curves, 1239
- Takagi, Kenji
see Matsumoto, Shinji, 34
- Talamona, D.
see Franssen, J. M., 1042
- Talbot, Douglas W., P.E.
 Marketing is Everyone's Job, 1527
- Tallericio, Alberto
see Pandolfi, Anna, 276
- Talukhaba, Alfred
see Jaselskis, Edward J., 162
- Tam, M. L.
see Lam, William H. K., 829
- Tam, P. W. M.
 Use of Inflatable Dams as Agricultural Weirs in Hong Kong, 785
- Tan, K. H.
see Fung, T. C., 1113
see Fwa, T. F., 1206
- Tan, Kiang-Hwee
see Shuo, Li, 1266
- Tan, Yoke Lin
 Investigation into Cause of Failure of 22 kV PILC Cable, 1007
- Tang, Chii-Jau
 Flow Separation During Solitary Wave Passing Over Submerged Obstacle, 735
- Tang, Jhy-Pyng
see Lu, Li-Teh, 262
- Tang, Man Chung, P.E.
 Balancing Act, 1415
- Tang, R. B.
see Mahendran, M., 1153
- Tankha, A.
see Godbole, P. N., 359
- Tarhini, Kassim M.
see Mabsout, Mounir E., 68
- Tarquin, Anthony J.
see Shafique, Md. Sazzad Bin, 426
- Tasi, Tsau-Don
 A New Clay Liner to Reduce Ground-Water Contamination from Heavy Metals, 502
- Task Committee Inspection and Monitoring of In-Service Penstocks of the Energy Division of the American Society of Civil Engineers
 Guidelines for Inspection and Monitoring of In-Service Penstocks, 1574
- Task Committee on Crane Safety on Construction Sites, ASCE
 Crane Safety on Construction Sites, 1557
- Task Committee on Sustainability Criteria, Water Resources Planning and Management Division, ASCE and the Working Group of UNESCO/IHP IV Project M-4.3
 Sustainability Criteria for Water Resource Systems, 1599
- Task Committee to Rewrite Manual of Practice N. 46, Committee on Pipeline Installation and Location, ASCE
 Pipeline Route Selection for Rural and Cross-Country Pipelines, 1585
- Tassoulas, John L.
see Hamzeh, Osama, 236
see Hamzeh, Osama N., 73
- Tatinclaux, J.-C., P.E.
 Recent Progress in River Ice Engineering Research at CRREL, 86
- Tatliso, Nilay
 Interaction Between Reinforcing Geosynthetics and Soil-Tire Chip Mixtures, 628
- Tay, Joo-Hwa
 Media-Induced Hydraulic Behavior and Performance of Upflow Biofilters, 461
- Telionis, Demetri P.
see Plaut, Raymond H., 1411
- Temel, B.
see Yertli, H. R., 616
- Teng, J. G.
 Sleeved Cone-Cylinder Intersection Under Internal Pressure, 325
- Thalhamer, Michael, P.E.
 Efficiency in the Bag, 1498
- Thambiratnam, David
see Zhuge, Yan, 1055
- Theis, Thomas L.
see Alderman, Bruce J., 374
see Collins, Anthony G., 452

AUTHOR INDEX

Toutanji

Thériault, Michèle

Effects of FRP Reinforcement Ratio and Concrete Strength on Flexural Behavior of Concrete Beams, 115

Thevanayagam, S.

Effect of Fines and Confining Stress on Undrained Shear Strength of Silty Sands, 571

Fractal Model for Flow Through Saturated Soils, 529

Injection of Nutrients and TEAs in Clayey Soils Using Electrokinetics, 557

Thirumalaiah, Konda

River Stage Forecasting Using Artificial Neural Networks, 794

Thomann, Robert V.

The Future "Golden Age" of Predictive Models for Surface Water Quality and Ecosystem Management, 385

Thomas, Allen

Probing Pipelines (available only in Geoenvironmental Special Issue), 1428

Thomas, Arthur C.

see Crohn, David M., 394

Thomas, Jay

see Vaysburd, Alexander M., P.E., 1410

Thomas, Natacha E.

Revised Design Parameters for Vertical Curves, 1238

Thomas, Stephen R.

Critical Communications Variables, 146

Thompson, David S.

Dave's Top Ten Signals You Might Need a Better Management Approach, 899

Thompson, Larry D.

see Grayson, Paul E., 1480

Thompson, Paul J.

Partnering Continuum, 939

Thomson, Edward

Simplified Model of Low Cycle Fatigue for RC Frames, 1143

Thorne, C. P.

Penetration and Load Capacity of Marine Drag Anchors in Soft Clay, 613

Thorne, Colin R.

see Richardson, W. Roy, 686

Thornton, Charles H.

see Corley, W. Gene, 1001

see Mlakar, Paul F., Sr., 1002

see Sozen, Mete A., 1003

Thornton, Christopher I.

see Abt, Steven R., 727

Thornton, Edward B., ed.

Coastal Dynamics '97, 1551

Tillman, Raymond, P.E.

Shadow Tolls, 1441

Tinawi, René

see Fronteddu, Luciano, 1173

Ting, Ching-Jung

Integrated Control for Series of Waterway Locks, 1346

Ting, Seng Kiong

see Wang, Shou Qing, 180

Tiong, L. K.

see Ng, W. M., 100

see Wang, Shou Qing, 180

Tipton, Terence L.

Self-Referencing Fiber-Optic Fluorescence Sensor for Turbid Samples, 438

Tisdale, T. S.

Streamline Upwind Finite-Element Method for Overland Flow, 689

Tisdale, Todd S.

see Jin, Kang-Ren, 1284

Titov, Vasily V.

Numerical Modeling of Tidal Wave Runup, 1342

Tobias, Daniel H.

Reliability-Based Method for Fatigue Evaluation of Railway Bridges, 1

Tognarelli, M. A.

see Kareem, Ahsan, 290

Tom, V. M.

see Pattnaik, S. B., 1243

Tommelein, Iris D.

Pull-Driven Scheduling for Pipe-Spool Installation: Simulation of Lean Construction Technique, 173

Tong, C. O.

see Wong, C. K., 1276

Tonon, Fulvio, P.E.

Generalization of Mauldon's and Goodman's Vector Analysis of Keyblock Rotations, 610

Toole, T. Michael, P.E.

Uncertainty and Home Builders' Adoption of Technological Innovations, 179

Toon, Jeffery

see Maxwell, Donald A., 159

Torchia, Stephen

see Cole, Jonathan H., P.E., 1422

Torkamani, Morteza A. M.

Transformation Matrices for Finite and Small Rotations, 251

Toro-Escobar, Carlos M.

see Parker, Gary, 762

Torone, Brian

Winning ADR Battles, 934

Torres, Raphael A.

see Boulanger, Ross W., 524

Tosswell, Paul

see Elarabawy, Mohsen, 1315

Touratier, M.

see Ganapathi, M., 347

Toutanji, H.

Durability Characteristics of Concrete Columns Wrapped with Fiber Tow Sheets, 958

Toutlemonde, François
see Sercombe, Jérôme, 334

Townsend, T. G.
see Carlson, J. R. J., 1369

Townsend, Timothy
see Musson, Stephen, 1372

Trabant, Stuart C.
see Abt, Steven R., 727

Trahair, N. S.
see Pi, Yong-Lin, 1044
see Pi, Yong-Lin, 1152
see Valentino, J., 1156

Transue, David J.
see Rens, Kevin L., P.E., 1000

Trapido, Marina
 Advanced Oxidation Processes for Degradation of
 2,4-Dichlor- and 2,4-Dimethylphenol, 457

Traver, Al E.
see LeBlond, David, 174

Tredway, Timothy C.
see Fritchen, David R., 40

Triantafillou, Thanasis C.
 Strengthening of Masonry Structures Using Epoxy-
 Bonded FRP Laminates, 124

Truesdail, S. E.
 Apparatus for Streaming Potential Measurements on
 Granular Filter Media, 522

Trussell, R. Rhodes
see Jacangelo, Joseph G., 1494

Tryby, Michael E.
see Boccelli, Dominic L., 1292

Tsai, Jiin-Song
 Lateral Extrusion Analysis of Sandwiched Weak Soil
 in Slurry Trench, 627

Tsai, John J.
see Huang, Hening, 658

Tsakiri, Maria
see Wang, Jinling, 1193

Tsanis, I. K.
see Boyle, S.J., 1291

Tsanis, Ioannis K.
see Valeo, Caterina, 1277

Tschegg, E. K.
 Fracture Behavior of Geosynthetic Interlayers in Road
 Pavements, 1255

Tseng, Ching-Ping
see Chung, Ying-Chien, 415

Tseng, Yi-Ping
see Huang, Chiung-Shiann, 308

Tsopelas, Panos
see Whittaker, Andrew, 1123

Tucciarelli, T.
see Aronica, G., 1303

Tucker, Mary L.
see McCambridge, James A., 902

Tucker, Richard L.
see Burleson, Rebecca C., 196
see Thomas, Stephen R., 146

Tumlin, K. Mark
see Mizerany, Joseph E., 1379

Tuncay, Kagan
 Self-Weight Subsidence of Saturated Soft Porous
 Media, 286

Türer, Ahmet
see Aktan, Emin, 1114

Turick, Charles E.
see Schmieman, Eric A., 424

Turner, John P.
see Dennis, Michael L., 536

Tuthill, Andrew M.
 Structural Ice Control: A Review, 82
 Structural Ice Control Alternatives for Middle Missis-
 sippi River, 91

Tutumluer, Erol
 Analysis of Granular Bases Using Discrete Deformable
 Blocks, 1267

Twardock, Robert K., P.E.
 Quarry Conversion, 1502

Tweedie, J. J.
 Tire Shreds as Lightweight Retaining Wall Backfill:
 Active Conditions, 624

Tyack, J. N.
see Fenner, R. A., 480

Tzeng, Jauhwan
see Huang, Chiajim, 467

Uber, James G.
see Boccelli, Dominic L., 1292
see Bush, Cheryl A., 1318

Uhlik, Felix T.
 Assessment of Constructability Practices Among Gen-
 eral Contractors, 51
 Trends in the Construction Needs of Hospital Facilities,
 53

Ukritchon, Boonchai
 Undrained Limit Analyses for Combined Loading of
 Strip Footings on Clay, 550

Ulbrich, Luciane A.
see Consoli, Nilo C., 639

Ulm, Franz-Josef
see Sercombe, Jérôme, 334

Umbrell, Edward R.
 Clear-Water Contraction Scour under Bridges in Pres-
 sure Flow, 676

Ünal, N. Erdem
 Incipient Motion of Coarse Particles on a Slope by Reg-
 ular or Irregular Waves, 1325

Undershute, Scott T.
see Kulak, Geoffrey L., 58

AUTHOR INDEX

Viklander

- Ungurian, M. H.
see Balachandar, R., P.E., 494
- Upadhyaya, A.
Comparison of Numerical and Analytical Solutions of Boussinesq Equation in Semiinfinite Flow Region, 886
- Urzua, Alfredo
see Christian, John T., 632
- see* Lambrechts, James R., ed., 1548
- U.S. Army Corps of Engineers
Geophysical Exploration for Engineering and Environmental Investigations, 1568
- Hydrographic Surveying, 1576
- Usami, Tsutomu
see Banno, Shigeru, 252
- see* Gao, Shengbin, 227
- see* Gao, Shengbin, 240
- Vaikuntum, Srinivasa R.
see Wilmot, Chester G., 1198
- Vairavamorthy, Kalanithy
Leakage Reduction in Water Distribution Systems: Optimal Valve Control, 779
- Valdés, Juan
see Batchelor, Bill, 417
- Valentine, Richard L.
Iron Oxide Surface Catalyzed Oxidation of Quinoline by Hydrogen Peroxide, 378
- Valentino, J.
Torsional Restraint Against Elastic Lateral Buckling, 1156
- Valeo, Caterina
Location of Recycling Depots with GIS, 1277
- Valiantzas, John D.
Analytical Approach for Direct Drip Lateral Hydraulic Calculation, 891
- Vallini, Paolo
see Fantilli, Alessandro P., 1139
- Valocchi, Albert J.
see Espinoza, Carlos, 825
- Van Benschoten, J. E.
see Ganguly, C., 407
- see* Ganguly, C., 512
- van Benthum, W. A. J.
Nitrogen Removal in Intermittently Aerated Biofilm Airlift Reactor, 402
- van de Kreeke, Jacobus
Second-Order Solution for Damped Cooscillating Tide in Narrow Canal, 789
- van Harten, A.
see Krikke, H. R., 416
- van Loosdrecht, M. C. M.
see van Benthum, W. A. J., 402
- VanArman, Joel
see Shih, George, 508
- Vasco, D. W.
Monitoring of Fluid Injection and Soil Consolidation Using Surface Tilt Measurements, 526
- Vaysburd, Alexander M., P.E.
Muscle Made of Carbon Fiber, 1410
- Veenis, Steven J.
see Mays, David C., 1377
- Veletsos, Anestis S.
Dynamics of Solid-Containing Tanks. II: Flexible Tanks, 1031
- see* Younan, Adel H., 1030
- Velivasakis, Emmanuel E.
Chloride Extraction and Realkalization of Reinforced Concrete Stop Steel Corrosion, 998
- Venkataraman, P.
Darcian, Transitional, and Turbulent Flow through Porous Media, 746
- Venkobachar, C.
see Philip, Ligy, 514
- Venosa, Albert D.
see Boufadel, Michel C., 819
- Venugopal, K.
see Ravikumar, V., 1309
- Verdibello, Mario, P.E.
see Mountain, Stewart, P.E., 1523
- Veressinina, Yelena
see Trapido, Marina, 457
- Verona, Giancarlo
see Maugeri, Michele, 581
- Veshosky, David
Managing Innovation Information in Engineering and Construction Firms, 903
- Vesilind, P. Aarne
Sustainable Development and the ASCE Code of Ethics, 1018
- see* Tasi, Tsau-Don, 502
- Viadero, Roger
see Reed, Brian E., 1374
- Vidaurrezaga, Alex
see Kuprenas, John A., 849
- Viggiani, M. Gioacchino
see Mooney, Michael A., 630
- Vigilar, Gregorio G., Jr.
Stable Channels with Mobile Bed: Model Verification and Graphical Solution, 774
- Vignet, Stephan N.
see Edge, Billy L., 720
- Vijay, P. V.
see GangaRao, Hota V. S., 1024
- Vijayaraghavan, K.
In Situ Hypochlorous Acid Generation for the Treatment of Tannery Wastewaters, 481
- Viklander, Maria
Particle Size Distribution and Metal Content in Street Sediments, 466

- Viladkar, M. N.**
see Godbole, P. N., 359
- Vinale, F.**
see Pagano, L., 611
- Vinzon, Susana B.**
 A Mechanism for the Formation of Lutoclines by Waves, 1340
- Vipulanandan, C., ed.**
 Recycled Materials in Geotechnical Applications, 1588
- Vipulanandan, Cumaraswamy**
see Ata, Alaa, 527
- Viraraghavan, T.**
see Kapoor, Anoop, 498
see Kumar, Pradeep, 397
- Virkler, Mark R.**
 System to Identify Turning Movements at Signalized Intersections, 1271
- Vitaliani, Renato**
see Sactta, Anna, 340
- Vittori, Giovanna**
 Oscillating Tidal Barriers and Random Waves, 694
- Vogel, Richard M.**
see Jacobs, Jennifer M., 1320
- Vogt, Brian S.**
see Tipton, Terence L., 438
- Voncken, J. H. L.**
see Rikers, R. A., 513
- Vondruska, M.**
 Stabilization of Incinerator Ash with High Chromium (VI) Content, 1384
see Samsonek, J., 1383
- VonHofe, Fred**
 Modeling Well Hydrodynamics, 783
- Voronin, Nikolai N.**
 Classification of Flotation Processes in Wastewater Decontamination, 427
- Vradis, George C.**
see Gold, Vladimir M., 248
- Vucetic, Mladen**
 Damping at Small Strains in Cyclic Simple Shear Test, 580
- Vuez, Alain R.**
see Rahai, Mohammed A., 638
- Waas, Anthony M.**
see Shahwan, Khaled W., 221
- Wada, Akira**
see Sacki, Eiichiro, 970
- Waddill, Dan W.**
 Three-Dimensional Model for Subsurface Transport and Biodegradation, 412
- Wagh, Arun**
see Wescott, James, 1361
- Wagner, Monika**
see Buchanan, Ian D., 470
- Wahab, M. M. Abdel**
 Dynamic Testing of Prestressed Concrete Bridges and Numerical Verification, 74
- Wahhab, H. I. Al-Abdul**
see Baig, M. Ghouse, 971
- Wahhab, Hamad I. Al-Abdul**
see Al-Dubabe, Ibrahim A., 972
see Ramadhan., Rezzqallah H., 954
- Wainwright, Peter J.**
see Olorunsogo, Folarin T., 975
- Waite, Timothy, P.E.**
 Domesticating Steel, 1408
- Walesh, Stuart G.**
see Roesner, Larry A., 917
- Walker, Stanley E., P.E.**
see Matthews, Susan L., P.E., 1443
- Wallace, Scott D.**
 Putting Wetlands to Work, 1476
- Wallender, W. W.**
see Raghuvanshi, N. S., 888
- Walsh, Patrick M.**
see Barrett, Michael E., 509
- Walters, Richard W.**
see Watson, Chester C., 648
- Walton, John C.**
see Shafique, Md. Sazzad Bin, 426
- Wang, C. C.**
see Lin, H. D., 552
- Wang, Cheng-Bin**
see Chang, Luh Maan, 980
- Wang, Chun-Yi**
see Peña-Mora, Feniosky, 97
- Wang, D.**
see Chowdhury, M. R., 1033
- Wang, Edward H.**
see Harmon, Thomas G., 363
- Wang, Gary Gang**
 Nonlinear Analysis of Reinforced Concrete Columns by Cubic-Spline Function, 305
- Wang, G-T.**
see Singh, V. P., 793
- Wang, Guangqian**
 Particle Model for Simulating Flow Over Large Areas, 712
- Wang, H. C. Ann**
see Valentine, Richard L., 378
- Wang, Hong**
 Numerical Modeling of Flow in Chlorine Disinfection Tanks, 753
- Wang, Jianlin**
see Yuan, Si, 343
- Wang, Jinling**
 Stochastic Modeling for Static GPS Baseline Data Processing, 1193

AUTHOR INDEX

Werner

- Wang, Kelvin C. P., ed.**
Computing in Civil Engineering, 1553
see Yang, Zhaoxia, ed., 1601
- Wang, Menghua**
DEM Based Overland Flow Routing Model, 791
- Wang, Ping**
Longshore Sediment Flux in Water Column and Across Surf Zone, 1336
- Wang, Q.**
see Liew, K. M., 224
- Wang, Qingyun**
see Goto, Yoshiaki, 1163
- Wang, Rubin**
Exact Stationary Response Solutions of Six Classes of Nonlinear Stochastic Systems under Stochastic Parametric and External Excitations, 206
- Wang, Shou Qing**
Evaluation and Competitive Tendering of BOT Power Plant Project in China, 180
see Anson, Michael, 153
- Wang, Ton-Lo**
see Jiang, Wei, 214
- Wang, W. C.**
see Li, X. S., 566
- Wang, Xiaosong**
see Shih, George, 508
- Wang, Y.**
see Li, X. S., 640
- Wang, Y. C.**
Deflection of Steel-Concrete Composite Beams with Partial Shear Interaction, 1149
- Wang, Yan-Chang**
Practicable BEM Analysis of Frictional Bolts in Underground Opening, 1062
- Wang, Yi-Tin**
Reductive Dechlorination of Chlorophenols in Methanogenic Cultures, 401
- Wang, Yongji**
New Model for Passing Sight Distance on Two-Lane Highways, 1263
- Wang, Z. L.**
see Li, X. S., 578
- Wang, Zhao Yin**
Resistance and Drag Reduction of Flows of Clay Suspensions, 645
- Wang, Zhengzhong**
Formula for Calculating Critical Depth of Trapezoidal Open Channel, 653
- Wang, Zhenming**
see Wang, Yi-Tin, 401
- Warner, Scott D.**
Considerations for Monitoring Permeable Ground-Water Treatment Walls, 435
- Warszawski, A.**
Economic Evaluation of Design Codes—Case of Seismic Design, 11
- Implementation of Robotics in Building: Current Status and Future Prospects, 143
- Washington, Simon P., ed.**
Transportation Planning and Air Quality III: Emerging Strategies and Working Solutions, 1603
- Wasserman, Edward P., P.E.**
Making the Grade, 1446
- Watanabe, Atsushi**
see Kasai, Kazuhiko, 1081
- Watanabe, Hiroyuki**
Upstream Boundary of Reservoir in Dynamic Analysis, 265
- Watkins, Andrew R.**
Cost Allocation in Urban Infrastructure Funding, 1274
- Watkins, Mark**
see Jonasson, Tim, 1391
- Watson, Alan**
see Pan, Youguang, 258
- Watson, Chester C.**
Aeration Performance of Low Drop Weirs, 648
see Abt, Steven R., ed., 1609
see Gessler, Daniel, 677
- Watson, Donald, P.E.**
see Bischoff, Deb, 1525
- Watson, Michael S., P.E.**
New Spin on Bid Sets, 1487
- Watts, P.**
Wavemaker Curves for Tsunamis Generated by Underwater Landslides, 1338
- Weatherby, David E.**
see Briaud, Jean-Louis, 535
- Weaver, Thomas J.**
see Rollins, Kyle M., 570
- Webster, Ian T.**
see Bormans, Myriam, 770
see Hutchinson, Paul A., 421
- Weddle, Peter**
Career Fitness, 909
- Wegmann, Frederick J.**
Trip Linkage Patterns for Workers, 1231
- Wei, Shelley C.**
see Li, Shu-Guang, 690
- Weingardt, Richard G.**
Building Knowledge (Available only in Structural Engineering Special Issue), 1448
- Weiss, Peter T.**
In-Stream Hollow-Fiber Membrane Aeration, 715
- Weiss, W. Jason**
Shrinkage Cracking of Restrained Concrete Slabs, 301
- Wellman, G.**
see Jones, J., 49
- Werner, Stuart D., ed.**
Seismic Guidelines for Ports, 1593

Wescott, James

Low-Level and Mixed Radioactive Waste In-Drum Solidification, 1361

Westerhoff, Paul

see Ozekin, Kenan, 425

Westermann-Clark, G. B.

see Truesdail, S. E., 522

Western, Andrew W.

Mixing Behavior of Density-Stratified Pools, 680

Wetzel, John P., ed.

see Demsetz, Laura A., ed., 1592

Wey, Ming-Yen

see Chen, Jyh-Cherng, 468

Whalen, T.

see Heckert, N. A., 1073

Wheeler, A. T.

Design Model for Bolted Moment End Plate Connections Joining Rectangular Hollow Sections, 1043

Whipple, Kelin X.

see Parker, Gary, 761

see Parker, Gary, 762

Whipple, William, Jr., ed.

Coordination: Water Resources and Environment, 1556

Water Resources: A New Era for Coordination, 1606

White, Daniel M.

Pyrolysis-GC/MS Analysis of Contaminated Soils in Alaska, 80

White, Richard N.

see Kim, Daejoong, 1092

Whitmore, David

see Velivasakis, Emmanuel E., 998

Whittaker, Andrew

Displacement Estimates for Performance-Based Seismic Design, 1123

Whittaker, Andrew S.

see Makris, Nicos, 353

Whittaker, T. J. T.

see Curran, R., 201

Whittle, Andrew J.

see Ukritchon, Boonchai, 550

Whitty, Paul, P.E.

Stretching a Landfill, 1486

Widdowson, Mark A.

see Waddill, Dan W., 412

Wiecking, Carter L.

Riding the Rail, 1509

Wigh, R.

see Deschamps, R., 569

Wigmosta, Mark S.

see Burges, Stephen J., 802

Wijetunge, Janaka J.

Effects of Sediment Transport on Bed Friction and Turbulence, 1343

Wilde, K.

Aerodynamic Control of Bridge Deck Flutter by Active Surfaces, 295

Wilhelms, Steve

see Geldert, Darrin, 706

Wilhelms, Steven C.

see Gulliver, John S., 726

Wilkinson, Tim

Tests to Examine Compact Web Slenderness of Cold-Formed RHS, 1150

Willems, Sander

see Katsamaki, Anastasia, 395

Williams, Fred W.

see Yuan, Si, 368

Williams, Phillip, P.E.

Inviting Trouble Downstream, 1417

Williams, Theresa M.

Use of Environmental SEM to Study Asphalt-Water Interactions, 967

Willis, Joe C.

see Kuhnle, Roger A., 775

Wilmot, Chester G.

Viability of Remote Sensing on Two-Lane Roads, 1198

Wilson, Thomas E., ed.

Water Resources and the Urban Environment-98, 1608

Windon, Dale A.

see Martinelli, David R., 18

Winnicki, Andrzej

Plastic Model for Concrete in Plane Stress State. Part I: Theory, 282

Plastic Model for Concrete in Plane Stress State. Part II: Numerical Validation, 283

Winsor, Derek S., P.E.

see Roy, Paul A., P.E., 1438

Winterwerp, J. C.

Erosion of Fluid Mud Layers. II: Experiments and Model Validation, 7

see Kranenburg, C., 8

Wirahadikusumah, Reini

see Abraham, Dulcy M., 187

Witherspoon, Stephen

see Finaish, Fathi, 17

Wittler, Rodney J.

see Bohrer, Jeffrey G., 767

Wohl, Ellen E.

Uncertainty in Flood Estimates Associated with Roughness Coefficient, 672

Woldt, W. E.

see Goderya, F. S., 1300

Wolf, Paul, P.E.

see Abrahams, Michael, P.E., 1413

Wonder, J. D.

see Kjartanson, B. H., 1365

AUTHOR INDEX

Yamazaki

- Wong, C. K.**
New Methodology for Calibrating the Lowry Model, 1276
- Wong, G. Sam**
see Rollings, Raymond S., 989
- Wong, I. H.**
see Poh, T. Y., 594
- Wong, S. C.**
Delay at Signal-Controlled Intersection with Bus Stop Upstream, 1225
see Wong, C. K., 1276
- Wood, A. L.**
see Annable, Michael D., 431
- Wood, Don J.**
see Lingireddy, Srinivasa, 202
see Lingireddy, Srinivasa, 1313
- Wordes, Dana**
see Rubin, Robert A., 943
- Work, Paul A.**
Bathymetric Surveying with GPS and Heave, Pitch, and Roll Compensation, 1186
Laboratory Study of Beach Nourishment Behavior, 1349
see Atanow, Gennadii A., 646
- Wörman, Anders**
Modeling Retention of Sorbing Solutes in Streams Based on Tracer Experiment Using ^{51}Cr , 388
- Wormleaton, Peter R.**
Aeration Performance of Triangular Plan-Form Labyrinth Weirs, 460
- Wright, Howard**
Axial and Bending Behavior of Composite Walling, 1107
- Wright, Howard D.**
see Hossain, K. M. Anwar, 1065
- Wright, S. G.**
see Low, B. K., 559
- Wright, Stephen G.**
see Gilbert, Robert B., 634
see Lai, Jiunnren, 528
- Wu, Baosheng**
see Molinas, Albert, 740
see Molinas, Albert, 744
- Wu, Chao-Hsiung**
Effects of Moisture on Pyrolysis of Polypropylene, 482
- Wu, Chigong**
see Liao, Huasheng, 768
- Wu, Feng-Shuai**
see Hsu, Chung-Chieh, 668
- Wu, Han C.**
Endochronic Theory of Continuum Damage Mechanics, 230
- Wu, J. C.**
Active Control of Transmission Tower under Stochastic Wind, 1164
- Wu, Jiangning**
Evaluation of Membrane Filtration and Ozonation Processes for Treatment of Reaction Dye Wastewater, 406
- Wu, Jinquan**
see Gui, Shengxiang, 687
- Wu, Jy S.**
Characterization and Pollutant Loading Estimation for Urban and Rural Highway Runoff, 444
- Wu, Mingyang**
see Adeli, Hojjat, 141
- Wu, Wells W.**
Effect of Bromide Ion on Haloacetic Acid Formation During Chlorination of Biscayne Aquifer Water, 486
- Wu, X.**
see Chuang, P. H., 1115
- Wu, Yuan-Ting**
see Lin, Pin-Sien, 1210
- Xiao, Weimin**
Layerwise Composite Plate Analysis Using an Element Template Methodology, 281
- Xiao, Yan**
Dynamic Testing of Full-Scale Concrete and Clay Tile Roof Models, 1078
Seismic Performance of High-Strength Concrete Columns, 1052
- Xing, Chen**
see Yi, Hanwen, 1229
- Xu, Chengchao**
Probabilistic Model for Water Distribution Reliability, 1304
- Xu, Weilin**
see Liao, Huasheng, 768
- Xu, Y. L.**
Vibration of Inclined Sag Cables with Oil Dampers in Cable-Stayed Bridges, 78
- Xue, Xuzhang**
see Gui, Shengxiang, 786
- Yadon, Douglas, P.E.**
see McDonald, Glen, P.E., 1414
- Yagi, Hiroshi**
see Nadaoka, Kazuo, 703
- Yamada, F.**
see Nakayama, A., 546
- Yamaguchi, T.**
see Poulsen, Tjalfé G., 391
- Yamaguchi, Tanemi**
see Saeki, Eiichiro, 970
- Yamamuro, Jerry A.**
Steady-State Concepts and Static Liquefaction of Silty Sands, 606
- Yamane, Carol L.**
see Warner, Scott D., 435
- Yamazaki, Fumio**
see Ansary, Mehedi Ahmed, 582

Yan, Junmao*see* Lü, Pengmin, 234**Yan, Ryan W. M.***see* Ng, Charles W. W., 585**Yang, D. Q.**

Coupled Model for Heat, Moisture, Air Flow, and Deformation Problems in Unsaturated Soils, 367

Yang, Dan

Climatic Soil Freezing Modeled in Centrifuge, 636

Predicting Frost Heave Using FROST Model with Centrifuge Models, 84

Yang, David S., ed.*see* Maher, Ali, ed., 1594**Yang, Fuheng**

Dynamic Response of Cable-Stayed Bridges Under Moving Loads, 298

Yang, Gang*see* Isaacson, Michael, 1337**Yang, Hai**

Neural Network Approach to Classification of Traffic Flow States, 1261

see Wong, S. C., 1225**Yang, J. N.***see* Wu, J. C., 1164**Yang, Jun***see* Li, Xiang-Song, 293**Yang, W. L.***see* Li, X. S., 566*see* Li, X. S., 625**Yang, Wei**

Guided Waves in Multilayered Plates for Internal Defect Detection, 246

see Weiss, W. Jason, 301**Yang, Yueh-Shiun***see* Ricles, James M., 1070**Yang, Zhaoxia, ed.**

Traffic and Transportation Studies, 1601

Yankielun, Norbert E.*see* Flanders, Stephen N., 54**Yao, Jian***see* Siddharthan, Raj V., 1265**Yasamis, Firuzan***see* Arditi, David, 183**Yashinsky, Mark**

Performance of Bridge Seismic Retrofits During Northridge Earthquake, 57

Yassin, A. A.*see* Ettema, R., 737**Yates, David N.**

Modeling the Nile Basin Under Climatic Change, 803

Yates, J. K.

Developing Standards and International Standards Organizations, 932

Ye, Jian

Simulation of Curved Open Channel Flows by 3D Hydrodynamic Model, 729

Yegian, M. K.

Dynamic Response Analysis Procedure for Landfills with Geosynthetic Liners, 621

Yegian, Mishac, ed.*see* Dakoulas, Panos, ed., 1570**Yeh, Gour-Tsyh***see* Cheng, Jing-Ru, 822**Yeh, Harry***see* Reed, Dorothy, 257**Yeh, I-Cheng**

Modeling Concrete Strength with Augment-Neuron Networks, 985

Quantity Estimating of Building with Logarithm-Neuron Networks, 184

Yeh, William W.-G*see* Sun, Yung-Hsin, 1287**Yeh, William W.-G.***see* Emch, Pamela G., 1295**Yen, Ben Chie***see* Chang, Tsang-Jung, 350**Yerli, H. R.**

Transient Infinite Elements for 2D Soil-Structure Interaction Analysis, 616

Yeung, W. S.*see* Wong, S. C., 1225**Yi, Hanwen**

Approaching OD Trip Volumes Based on Inverse T-V Equation, 1229

Yildirim, Nevzat

Critical Submergence for Intakes in Still-Water Reservoir, 657

Yilmaz, Oguz

Hydrodynamic Interactions of Waves with Group of Truncated Vertical Cylinders, 1354

Yim, Paul K. N.

Evaluation of Count Location Selection Methods for Estimation of O-D Matrices, 1244

Yim, S. C. S.*see* Lin, H., 266**Yin, Jiansheng***see* Bank, Lawrence C., 1237**Yin, R.***see* Chow, W. K., 43**Yip, T. L.**

Water Wave Control by Submerged Pitching Porous Plate, 260

Yomata, Atsushi*see* Moustafa, Mahmoud M., 879**Yong, Kwet-Yew***see* Lee, Fook-Hou, 558**Yonge, David R.***see* Schmieman, Eric A., 424

AUTHOR INDEX

Zhang

- Yoo, Chai H.**
see Lee, Sung C., 1045
- Yoshida, Ikumasa**
see Hoshiya, Masaru, 366
- Yoshida, Tetsuji**
see Matsumoto, Shinji, 34
- Yost, Scott A.**
 Global Identification of Surface Irrigation Parameters, 869
- You, Z.**
see Lai, C.-Y., 26
- You, Zai-Jin**
 Initial Motion of Sediment in Oscillatory Flow, 1331
- Younan, Adel H.**
 Dynamics of Solid-Containing Tanks. I: Rigid Tanks, 1030
see Veletsos, Anestis S., 1031
- Young, B.**
 Design of Lipped Channel Columns, 1040
 Tests of Fixed-Ended Plain Channel Columns, 1039
- Young, Ching-Wen**
see Chao, Ching-Kong, 226
- Young, G. Kenneth**
see Umbrell, Edward R., 676
- Young, Reginald H. F.**
see Johnson, Holly M., 189
- Young, Robert A.**
see Grenney, William J., 876
- Young-Pezeshk, Jayne, ed.**
see Abt, Steven R., ed., 1609
- Yu, Bofu**
 Theoretical Justification of SCS Method for Runoff Estimation, 892
- Yu, H. S.**
 Analysis of Cone Resistance: Review of Methods, 538
 Limit Analysis Versus Limit Equilibrium for Slope Stability, 523
- Yu, Jinkyu**
see Reed, Dorothy, 257
- Yu, Li-Ren**
 Tidal and Transport Modeling by Using Turbulence $k-\epsilon$ Model, 399
- Yu, Philip C. H.**
see Chow, W. K., 56
- Yu, T. S.**
 Instantaneous Discharge of Buoyant Fluid in Cross-Flow, 781
- Yu, Z.**
see Xu, Y. L., 78
- Yuan, Si**
 Analysis of Floating Roofs by ODE-Solver Method, 343
 Bending Analysis of Mindlin Plates by Extended Kantorovich Method, 368
- Yuasa, Akira**
see Matsui, Yoshihiko, 506
- Yuhr, L.**
see Kjartanson, B. H., 1365
- Yüksel, Yalcin**
see Agaccioglu, Hayrullah, 873
- Yulistiyanto, B.**
 Free-Surface Flow Around Cylinder: Shallow-Water Modeling with Diffusion-Dispersion, 696
- Yum, Kyu-Jin**
 Continuous-Flow Wood Chip Reactor for Biodegradation of 2,4-DCP, 396
- Yun, Henry W.**
see Xiao, Yan, 1078
- Yurtal, Recep**
see Seckin, Galip, 710
- Yurteri, Coşkun**
see Çakiroğlu, Cem, 447
- Zagers, Bryan R.**
see Schneider, Stephen P., 1122
- Zaghloul, Nabil A.**
 Flow Simulation in Circular Pipes with Variable Roughness Using SWMM-EXTRAN Model, 649
- Zahrai, Seyed Mehdi**
 Impact of Diaphragms on Seismic Response of Straight Slab-on-Girder Steel Bridges, 1127
- Zawilski, M.**
see Osuch-Pajdzińska, E., 445
see Osuch-Pajdzińska, E., 446
- Zech, Y.**
see Yulistiyanto, B., 696
- Zeldin, B. Z.**
 Spectral Identification of Nonlinear Structural Systems, 296
- Zeng, X.**
 Seismic Response of Gravity Quay Walls. I: Centrifuge Modeling, 564
see Madabhushi, S. P. G., 565
- Zhan, J. M.**
see Li, Y. S., 730
- Zhang, Chonghou**
see Goto, Yoshiaki, 357
- Zhang, Chuntao**
see Moore, Ian D., 1234
- Zhang, En-Cheng**
see Huang, Ching-Jer, 341
- Zhang, Hua**
 Maximum Penetration of Vertical Round Dense Jets at Small and Large Froude Numbers, 711
- Zhang, Jian-Zhong**
see Buenfeld, Nick R., 979
- Zhang, Jun, ed.**
 Ocean Wave Kinematics, Dynamics and Loads on Structures, 1582

Zhang, L. M.

see Law, S. S., 360

Zhang, Lianyang

Assessment of Liquefaction Potential Using Optimum Seeking Method, 593

End Bearing Capacity of Drilled Shafts in Rock, 579

Zhang, Limin

see McVay, Michael, 620

Zhang, Li-Xin "Bob"

Behavior and Analysis of 100 MPa Concrete Membrane Elements, 1027

Zhang, Renduo

see Gui, Shengxiang, 687

see Gui, Shengxiang, 786

Zhang, Yi

see Aral, Mustafa M., 777

Zhang, Yin

see Cai, Chun S., 1401

Zhang, Zhikang

see Wang, Rubin, 206

Zhang, Zongfen

see Aktan, Emin, 1114

Zhao, Banghua

see Lü, Pengmin, 234

Zhao, Gang

see Molls, Thomas, 651

Zhao, Jun

Structural Damage Detection Using Artificial Neural Networks, 838

Zhao, Xing-Hua

Solutions of Multilayer Inclusion Problems Under Uniform Field, 231

Zhao, Yan-Gang

System Reliability Evaluation of Ductile Frame Structures, 1099

Zhao, Yu

Finite-Element Analysis of Transverse Lift on Circular Cylinder in Channel Flow, 346

Zheng, C.

Numerical Simulation of Tracer Tests in Heterogeneous Aquifer, 433

Zheng, Y.

Boundary Shear in Rectangular Ducts and Channels, 652

Zheng, Yunsheng

Dynamic Model for Zone Settling and Compression in Gravity Thickeners, 489

Zhong, Hongzhi

see Yuan, Si, 343

Zhong, Xiaoxiong

see Chang, Ching S., 370

Zhou, Jianjun

One-Dimensional Mathematical Model for Suspended Sediment by Lateral Integration, 732

Zhou, Si-Zhu

see Mau, S. T., 1054

Zhou, Y.

Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media, 339

Zhuge, Yan

Nonlinear Dynamic Analysis of Unreinforced Masonry, 1055

Zierolf, Michael L.

see Boccelli, Dominic L., 1292

Zils, John

see Iyengar, Hal, 1429

Zimmerman, Kathryn A., P.E.

Improving IDOT's Pavement Condition Rating Process, 836

Zimmermann, Thomas

see Jirásek, Milan, 242

see Jirásek, Milan, 310

Zipf, Peter J., P.E.

An Integrated Project Management System, 922

Zofnass, Paul J.

The New Environment for Consolidation, 1514

Zornberg, Jorge G.

Limit Equilibrium as Basis for Design of Geosynthetic Reinforced Slopes, 588

Performance of Geosynthetic Reinforced Slopes at Failure, 587

Zou, S.

see Parr, A., 478

Zreik, Diana A.

Erosional and Mechanical Strengths of Deposited Cohesive Sediments, 772

Zuo, Q. H.

Piecewise Linear Warping Theory for Multilayered Elastic Beams, 254

Zureick, Abdul-Hamid

see Littles, Jerrol W., 129

Zytner, R. G.

see Harper, B., 500

